

BULLETIN OF MISCELLANEOUS INFORMATION No. 7 1936 ROYAL BOTANIC GARDENS, KEW

XXXVIII—PRELIMINARY LIST OF FUNGI AND DISEASES OF PLANTS IN SIERRA LEONE. F. C. DEIGHTON. (Plant Pathologist, Agricultural Department, Sierra Leone).

Nearly all the records here listed have been made since 1926 by the author, and the fungi have been identified by the staff of the Imperial Mycological Institute. A few records were made in 1925 by Dr. V. C. Dunlap, who visited Sierra Leone as representative of Messrs. Elders and Fyffes, and by Mr. G. H. Jones, then Mycologist, Department of Agriculture, Nigeria: in these cases their authority for the record is given.

Each record shows the name of the host plant, the part affected, the organism or disease, the locality (town and chiefdom) and date of collection, and the collection number of the specimen, material of which has been sent to the Imperial Mycological Institute. In a few cases no such collection has been made and no number is therefore quoted: this applies especially to certain records of common omnivorous fungi. Collection numbers (author's collection) of host plants are given in a few cases where the specific name is not known: these refer to material in the Herbarium of the Royal Botanic Gardens, Kew.

It has been observed that the omnivorous fungi *Corticium* (*Rhizoctonia*) *Solani* and *Sclerotium* "*Rolfsii*" occur very rarely on wild host plants. Records of *Corticium Solani* on wild host plants have only been listed in cases of definite attack which is not merely the result of spread from contact with affected cultivated plants: there are only six such records. *Sclerotium* "*Rolfsii*" has not been seen attacking a wild host plant except very rarely in spreading over the soil from a diseased cultivated plant. Records of the thread-blight fungi (*Marasmius* spp.) on wild host plants are numerous but are not included in the list. The "red rust" alga (*Cephaleuros*), which is common on the leaves of a large number of wild and cultivated plants, has only been included in the list when its attack has been recorded as severe. Records of attack by the root-knot nematode (*Heterodera Marioni* (Corn.) Good.), which is often severe on garden plants, have not been listed.

It is probable that certain fungi (especially *Polyporaceae*) which in Sierra Leone have been recorded so far only as saprophytes, are facultative parasites. The names of those so far recorded will be found in the "List of Fungi collected in Sierra Leone" published in this same number of the Bulletin.

Adenia cissampeloides Harms.

On leaves : *Aecidium bomolense* Syd. Makump (Mapaki), 23.8.28, M 213 ; Njala (Kori), 25.7.33, M 711 ; Baiima (Gbo), 23.9.35, M 819.

Adenia lobata Engl.

On leaves : *Aecidium bomolense* Syd. Allen Town (Colony), 1.6.33, M 459.

Afzelia bracteata Vog.

On leaves : *Meliola bicornis* Winter. Njala (Kori), 18.3.33, M 443.

Agave sisalana Perrine, Sisal.

On leaves : "Sun scorch". Physiological.

Ageratum conyzoides Linn.

In stem : *Fusarium oxysporum* Schlecht. Wilt. Njala (Kori), November 1933.

Albizzia gummifera C. A. Smith.

On leaves : *Meliola bicornis* Winter. Njala (Kori), 2.12.33, M 497.

Albizzia zygia Macbride.

On leaves : *Meliola bicornis* Winter. Njala (Kori), 26.2.33, M 435 ; Batkanu (Gombahun), 15.1.34, M 580A. *Oidium* sp. Hill Station (Colony), 19.5.35, M 715.

Allium ascalonicum Linn., Native Shallot.

On leaves : *Cercospora Duddiae* Welles. Makump (Mapaki), 8.2.29, M 256.

Allium Cepa Linn., Onion.

On leaves : *Cercospora Duddiae* Welles. Makump (Mapaki), 8.2.29, M 257.

Amaranthus caudatus Linn., "Spinach" or "Bush Greens".

On leaves and stems : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), 25.11.30, M 337B.

Anchomanes difformis Engl.

On leaves : *Cercospora* sp. Njala (Kori), 13.7.28, M 269.

Andropogon gabonensis Stapf.

On leaves : *Puccinia Andropogonis* Schw. Newton (Colony), 26.6.35, M 740A.

Andropogon tectorum Schum.

On leaves : *Puccinia Andropogonis* Schw. Rokupr (Samu), 28.1.35, M 692 ; Newton (Colony), 15.11.28, M 222 ; Makump (Mapaki), 3.5.29, M 274.

Angelonia grandiflora C. Morr.

On stem : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

Anthocleista Frezoulsii A. Chev.

On leaves : *Pucciniosira Anthocleistae* P. Henn. Njala (Kori), 5.1.34, M 571.

Anthocleista nobilis G. Don.

On leaves : *Pucciniosira Anthocleistae* P. Henn. Hill Station (Colony), 31.12.26 ; Njala (Kori), 5.1.34, M 572.

Arachis hypogaea Linn., Groundnut.

Mosaic diseases, including "rosette" (virus diseases). Common everywhere.

On leaves, stems and fruit "pegs" ; *Cercospora personata* (Berk. & Curt.) Ell. & Ev. Njala (Kori), 12.10.33, M 488. Common everywhere. *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori), Mapaki (Mapaki), Bunbuna (Dansogoia), Binkolo (Safroko Limba), August 1928.

Artocarpus integrifolia Linn., Jak-fruit.

On leaves : *Botryodiplodia Theobromae* Pat. Njala (Kori), 1.5.29, M 283.

Asclepias curassavica Linn.

On blossoms, and causing die-back of stems : *Choanephora* sp. Njala (Kori), April 1932.

Aster laevis Linn.

On leaves : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori), October 1933.

Avicennia nitida Jacq.

On leaves : *Irenina sepulta* (Pat.) Stev. Gbangbaia (Banta), 19.11.31, M 358.

Bauhinia acuminata Linn.

On fruit : *Colletotrichum gloesporioides* Penz. Njala (Kori), 13.1.35, M 685.

Bauhinia tomentosa Linn.

On stems : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori), April 1932.

Begonia sp. (Garden ornamental).

On leaves : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori), November 1932, M 405.

Beta vulgaris Linn., Beet.

On leaves : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), 2.7.35, M 752.

Bignonia magnifica Bull.

On leaves : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori), July, 1935.

Blepharis maderaspatensis Heyne.

On leaves : *Aecidium Blepharidis* Har. & Pat. Hill Station (Colony), 31.12.26, M 125 ; Njala (Kori), 21.1.35, M 686 ; Robat (Samu), 6.8.35, M 782. Common.

Boerhaavia diffusa Linn.

On leaves : *Cercospora* sp. Yoni (Sitia), 19.3.32, M 385.

Borreria ramisparsa D.C.

On leaves : *Puccinia lateritia* Berk & Curt. Njala (Kori), 14.9.26, M 30 ; Baiima (Gbo), 25.9.35, M 821. Rokupr (Samu), November 1935, M 821A. Common.

Borreria verticillata (L.) G. F. W. Mey.

On leaves : *Puccinia lateritia* Berk. & Curt. Rotifunk (Bumpe), 26.4.32, M 392.

Brachiaria distichophylla Stapf.

On leaves : *Uromyces leptodermus* Syd. Lumley (Colony), 20.10.29, M 284.

Brachycorythis Kalbreyeri Rehb. f. var. **glandulosa** Braid.

On leaves : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori).

Brassica Rapa Linn., Turnip.

On leaves : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), 27.5.27, M 148. *Macrophomina Phaseoli* (Maubl.) Ashby. Njala (Kori), 4.7.28, M 233.

Brassica oleracea Linn., Cabbage, Kohlrabi, etc.

On leaves : *Alternaria circinans* (Berk. & Curt.) Bolle. Njala (Kori), 22.12.30, M 321A and B. *Corticium Solani* (Prill. & Del.) Bourd & Galz. Njala (Kori), 25.11.30, M 337E. *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

Cajanus Cajan Millsp., Pigeon Pea.

On leaves : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Form with large sclerotia, Njala (Kori), 21.7.31, M 349 ; form with small sclerotia, Njala (Kori), 21.7.31, M 349A. *Uredo Cajani* Syd. Njala (Kori), 15.10.28, M 212.

On stems : *Stilbum nanum* Mass., probably. Njala (Kori), January 1932, M 372.

Caladium bicolor Vent.

On leaf stalks : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

Callichilia subsessilis Stapf.

On leaves : *Cercospora* sp. Njala (Kori), 24.12.28, M 245.

Calonyction muricatum G. Don.

On leaves : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori). *Sclerotium* sp. of *S. Rolfsii* group. Leaf spot of cotyledons. Njala (Kori).

Calopogonium mucunoides Desv.

On leaves : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori).

Canavalia ensiformis DC., Sword Bean.

Mosaic (virus).

On cotyledons : *Neocosmospora vasinfecta* E. F. Smith. Newton (Colony), June 1935.

On leaves : *Cercospora Canavaliae* Syd. Njala (Kori). 23.12.33, M 575, and 22.1.34, M 575A.

On stems and leaves : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori), June 1935.

Canna spp. Garden Canna.

On leaves : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori).

In stems : Wilt. (*Bacterium* ? *Solanacearum* E.F.Sm.). Njala (Kori), July 1935.

Capsicum annum Linn., Peppers.

Leaf Crinkle (virus). Common probably everywhere.

On leaves and stems : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori).

On fruit : *Colletotrichum Capsici* (Syd.) Butl. & Bisby. Njala (Kori), July 1928. *Glomerella cingulata* (Stonem.) Spauld & von Schrenk. Njala (Kori). Common.

Capsicum frutescens Linn., Chillies.

Leaf Crinkle (virus). Common probably everywhere.

On stems : *Choanephora* sp. Causing die-back, Njala (Kori),

July 1928. *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), 2.1.31, M 337D. *Glomerella cingulata* (Stonem.) Spauld. & von Schrenk. Njala (Kori).

Cardiospermum Halicacabum Linn.

On leaves : *Cercospora* sp. Njala (Kori), 19.4.34, M 644.

Carica Papaya Linn., Papaw.

In roots : *Macrophomina Phaseoli* (Mauubl.) Ashby. Njala (Kori), 1933. *Sphaerostilbe repens* Berk. & Br. Njala (Kori), 22.10.35, M871A

In stems : *Phytophthora parasitica* Dastur emend. Ashby. Njala (Kori). July 1935.

On leaves : *Oidium* sp. On seedlings in shade. Njala (Kori), 2.4.35, M 706.

On fruit : *Botryodiplodia Theobromae* Pat. *Colletotrichum Capsici* (Syd.) Butler & Bisby. *Glomerella cingulata* (Stonem.) Spauld & von Schrenk. *Helminthosporium gigasporum* Berk. & Br. subsp. *javanicum* Penz. & Sacc. *Phoma* sp. Njala (Kori), January 1934, M 599.

Cassia Sieberiana DC.

On leaves : *Cercospora* sp. Njala (Kori), 23.10.33, M 506. *Mimema* sp., or near this genus. Njala (Kori), 30.11.34, M 660.

Cathormion altissimum Hutch. & J. E. Dandy.

On trunk : *Fomes yucatanensis* (Murr.) Sacc. & D. Sacc. Njala (Kori), 12.2.28, M 181 ; 7.7.31, M 347.

Celosia argentea Linn.

On leaves : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), August, 1935. Uncommon.

Centrosema Plumieri Benth.

On leaves and stems : *Corticium Solani* (Prill. & Del.) Bourd. Galz. Njala (Kori), July 1935.

Cercestis congoensis Engl. ?

On leaves : *Cercospora* sp. Njala (Kori), 25.4.35, M 645.

Chasmopodium caudatum Stapf.

On inflorescence : *Balansia* sp. Near Kabala (Warawara Yagala), 16.11.30, M 314. *Ustilago flagellata* Syd. Near Juring (Gbema), 1.12.26, M 95 ; Tombo (Mambolo), 8.1.28, M 169 ; Magburaka (Kolifa Rowala), 6.5.29, M 273A ; Bendugu (Sengbe), 22.4.29, M 273B, very abundant ; Kamiototo (Tamiso), 11.11.30, M 312 ; Tabe (Kowa), 22.9.35, M 835.

Chlorophora excelsa Benth. & Hook. f.

On leaves : *Cercospora* sp. Njala (Kori), 25.3.33, M 449.

Christiana africana DC.

On leaves : *Cercospora* sp. Njala (Kori), 22.1.34, M 577.

Chrysanthemum sinense Sabine, Florists' Chrysanthemum.

On leaves : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

Cinnamomum zeylanicum Nees, Cinnamon.

On leaves : *Rhinotrichum* sp. Njala (Kori), 4.7.35, M 750.

Cissus Afzelii Gilg & Brandt.

On fruit : *Oidium* sp. Baiima (Gbo), 24.9.35, M 836.

Citrullus vulgaris Schrad., Water Melon.

On leaves : *Cercospora citrullina* Cooke. Newton (Colony), 1.2.35, M 701. *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori). Rare.

Citrus aurantifolia Swingle, Lime.

On leaves : *Sphaceloma Fawcettii* Jenkins (*Sporotrichum Citri* Butl.). On Tahiti lime, Newton (Colony), 15.12.33, M 638.

On fruit : Scabby lesions, rare, Njala (Kori), September 1933, M 620. Cause doubtful.

Fruit rots : *Aspergillus niger* van Tiegh. *Colletotrichum gloeosporioides* Penz. *Diplodia natalensis* Pole Evans. *Oospora Citri-Aurantii* (Ferrar.) Sacc. & Syd.

Citrus Aurantium Linn., Sour Orange.

On leaves : *Septobasidium* sp. Near Njala (Kori), 26.12.33, M 585.

On leaves and fruit : *Sphaceloma Fawcettii* Jenkins (*Sporotrichum Citri* Butl.). Njala (Kori), 27.1.29, M 643 ; Newton (Colony).

Fruit rots : *Diplodia natalensis* Pole Evans. *Oospora Citri-Aurantii* (Ferrar.) Sacc. & Syd.

Citrus Limonia Osbeck, Lemon.

On leaves : *Cephaleuros mycoidea* Karst. On rough lemon, Njala (Kori), January 1934. *Colletotrichum gloeosporioides* Penz. Njala (Kori). *Septobasidium* sp. Njala (Kori), 4.12.28, M 253. *Sphaceloma Fawcettii* Jenkins (*Sporotrichum Citri* Butl.). Njala (Kori), 29.12.33, M 641 and 642 ; Newton (Colony), Batkanu (Gombahun).

On trunk : Foot rot. Cause not determined. Njala (Kori), Batkanu (Gombahun), Newton (Colony).

On fruit : *Sphaceloma Fawcettii* Jenkins (*Sporotrichum Citri* Butl.).

Fruit rots : *Aspergillus niger* van Tiegh. *Diplodia natalensis* Pole Evans. Njala (Kori), January 1934, M 600. *Oospora Citri-Aurantii* (Ferrar.) Sacc. & Syd. *Penicillium digitatum* Sacc.

Citrus medica Linn., Citron.

On leaves : *Colletotrichum gloeosporioides* Penz. Njala (Kori).

Citrus nobilis Lour. var. *deliciosa* Swingle, Tangerine & Mandarin.

On leaves and fruit: *Sphaceloma Fawcettii* Jenkins (*Sporotrichum Citri* Butl.). Njala (Kori), Newton (Colony).

Fruit rots: *Aspergillus niger* van Tiegh. *Colletotrichum gloeosporioides* Penz. *Diplodia natalensis* Pole Evans. *Oospora Citri-Aurantii* (Ferrar.) Sacc. & Syd. *Penicillium digitatum* Sacc. *Penicillium italicum* Wehm. *Mycotorula* sp. and *Saccharomycodes Ludwigii* Hansen are commonly associated with rots following fruit-piercing lepidoptera.

Citrus nobilis Lour. var. *Unshiu* Swingle, Satsuma.

On leaves and fruit: *Sphaceloma Fawcettii* Jenkins (*Sporotrichum Citri* Butl.). Njala (Kori), 23.12.32, M 640.

Citrus paradisi Macf., Grapefruit.

On leaves: *Colletotrichum gloeosporioides* Penz. Njala (Kori), 6.12.28, M 243; Newton (Colony), June 1935, M 773. *Septobasidium* sp. Njala (Kori), 4.12.28, M 253. *Sphaceloma Fawcettii* Jenkins (*Sporotrichum Citri* Butl.). Njala (Kori), 2.10.28, M 268. Also at Newton (Colony).

On trunk: Foot rot. Cause not determined. Newton (Colony).

On fruit: *Leptothyrium Pomi* (Mont. & Fr.) Sacc. Fly-speck. Njala (Kori), 29.1.29, M 251. *Sphaceloma Fawcettii* Jenkins (*Sporotrichum Citri* Butl.). Njala (Kori), Newton (Colony).

Fruit rots: *Aspergillus niger* van Tiegh. *Aspergillus Wentii* Wehm. series, on shrivelled fruit in store. *Colletotrichum gloeosporioides* Penz. *Diplodia natalensis* Pole Evans. Njala (Kori), November 1933, M 533. *Fusarium* spp., following punctures by needle or by fruit-piercing lepidoptera. Most strains isolated at Njala were forms of *F. moniliforme* Sheld. var. *subglutinans* Wollenw. & Reink.: *F. Theobromae* App. & Strunk., and *F. oxysporum* Schlecht. were each once isolated. *Hypomyces Ipomoeae* (Halst.) Wollenw. *Oospora Citri-Aurantii* (Ferrar.) Sacc. & Syd. *Penicillium digitatum* Sacc. *Penicillium italicum* Wehm. *Peroneutypella pusilla* Syd., isolated from rot following needle puncture.

Citrus sinensis Osbeck, Sweet Orange.

Psorosis. Probably virus. On Late Valencia and Washington Navel. Njala (Kori), 1934.

On trunk: *Phytophthora parasitica* Dastur emend. Ashby. Isolated from foot rot, Njala (Kori), 1929. Foot rot is widely distributed in the country.

On blossoms: *Botrytis cinerea* Pers. Njala (Kori), 7.9.33, M 471.

On fruit and trees: Scabby lesions, very rare, on Valencia orange, Njala (Kori), December 1932, M 416. Possibly *Sphaceloma Fawcettii* Jenkins, but doubtful.

Fruit rots: *Colletotrichum gloeosporioides* Penz. *Diplodia natalensis* Pole Evans. *Fusarium moniliforme* Sheld. var. *subglutinans* Wollenw. & Reink. Several strains isolated at Njala from rots follow-

ing punctures by needle or fruit-piercing lepidoptera. *Oospora Citri-Aurantii* (Ferrar.) Sacc. & Syd. *Penicillium digitatum* Sacc. *Mycotorula* sp. and *Saccharomycodes Ludwigii* Hansen are commonly associated with rots following fruit-piercing lepidoptera.

Citrus sp., Sweet Lime.

On leaves : *Sphaceloma Fawcettii* Jenkins (*sporotrichum Citri* Butl.). On a small proportion of seedlings, Newton (Colony), May 1933, M 639.

Fruit rots: *Aspergillus niger* van Tiegh. *Oospora Citri-Aurantii* (Ferrar.) Sacc. & Syd. *Penicillium digitatum* Sacc. *Phytophthora parasitica* Dastur section *macrospora* Ashby. *Mycotorula* sp. and *Saccharomycodes Ludwigii* Hansen are commonly associated with rots following fruit-piercing lepidoptera.

Clerodendron Buchholzii Gürke.

On leaves : *Hemileia Scholzii* Syd. Njala (Kori), January 1934, M 570.

Clerodendron fallax Lindl.

On leaves : *Cercospora* sp., identical with that on *C. paniculatum*. Njala (Kori), 4.11.33, M 507.

On stems : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

Clerodendron fragrans Vent.

On stems and leaves : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

On leaves : *Cercospora* sp. of *C. canescens* type. Njala (Kori), 5.12.34, M 663.

Clerodendron paniculatum Linn.

On leaves : *Cercospora* sp., identical with that on *C. fallax*. Njala (Kori), 13.11.33, M 508. *Hemileia Scholzii* Syd. Njala (Kori), 21.10.35, M 865. *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

Clerodendron scandens Beauv.

On leaves : *Cercospora* sp., of *C. canescens* type. Njala (Kori), 27.12.28, M 238, 11.12.34, M 666, and 29.10.35, M 743C ; Newton (Colony), 27.6.35, M 743A ; Rokupr (Samu), 6.8.35, M 743B. *Hemileia Scholzii* Syd. Njala (Kori), 4.1.29, M 244 ; Hill Station (Colony), 3.8.35, M 722C ; Masanki (Ribi), 1.8.35, M 722B ; Rokupr (Samu), 6.8.35, M 722D.

Cocos nucifera Linn., Coconut.

On fruit : *Botryodiplodia Theobromae* Pat. Njala (Kori), 28.2.34, M 624. *Fusarium sambucinum* Fuck. Njala (Kori), 28.2.34, M 624.

Coffea arabica Linn.

On leaves : *Cercospora coffeicola* Berk. & Cooke. Njala (Kori), 15.6.27, M 159.

Coffea canephora *Pierre.*

On leaves and fruit : *Cercospora coffeicola* Berk. & Cooke. Njala (Kori) and elsewhere.

Coffea liberica *Bull.*

On leaves : *Irenina glabra* (Berk. & Curt.) Stev. Near Waterloo (Colony), 11.8.26, M 6. *Pestalozzia Coffeae* Zimm. On unshaded young plants, Kambia (Magbema), 28.12.27, M 173.

On leaves and stem : *Cephaleuros mycoidea* Karst. Makump (Mapaki), 31.3.31. Common on leaves in the Colony and elsewhere. *Marasmius scandens* Mass. White thread. Zimi (Makpeli), December 1930, M 333.

On leaves and fruit : *Cercospora coffeicola* Berk. & Cooke. Njala (Kori) and elsewhere.

Coffea robusta *Linden.*

On leaves and fruit : *Cercospora coffeicola* Berk. & Cooke. Njala (Kori) and elsewhere.

Coffea stenophylla *G. Don.*

Witch-broom disease. Cause unknown. Common in the Colony.

On leaves and fruit : *Cercospora coffeicola* Berk. & Cooke. Njala (Kori), Colony, and elsewhere.

Cola caricifolia *K. Schum.*

On leaves : *Irenopsis guianensis* (Stev. & Dowell) Stev. Njala (Kori), 31.1.33, M 560.

Cola nitida *A. Chev., Kola.*

On twigs : *Marasmius scandens* Mass. White thread. Between Mabonto and Bumbuna (Simiria), 25.8.28, M 187 ; and elsewhere. Common. *Marasmius* sp. aff. *M. equicrinis* Mull. Horse-hair blight. Peje (Bumpe), 19.4.29, M 279A, and elsewhere. Common. *Pseudomonas* sp. in association with *Fusarium* sp. Causing twig blight. Njala (Kori), 1925, *Dunlap.*

On trunk : *Fomes noxius* Corner. Shian (Bake Loko), March 1930, M 308.

Cordyline terminalis *Kth. var. ferrea Baker.*

On leaves : *Fusarium semitectum* Berk. & Rav. var. *majus* Wollenw. Njala (Kori), 10.12.32, M 410 and 15.1.35, M 410A.

Coreopsis Drummondii *Torr. & Gray.*

On stems : Wilt. *Bacterium* ? *Solanacearum* E. F. Sm. Njala (Kori), 1933. *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

Coreopsis grandiflora *Nutt.*

On stems : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

Coreopsis tinctoria Nutt.

On stems : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

On leaves : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori).

Cosmos sulphureus Cav.

On leaves and stems : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori).

On stems : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

Crotalaria juncea Linn., Sunn Hemp.

On leaves : *Cercospora* sp., apparently *C. canescens* Ell. & Mart. Njala (Kori), 8.7.33, M 463. *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), 18.9.31, M 354C, and 30.6.31, M 345.

Crotalaria retusa Linn.

Mosaic. Probably virus.

On leaves : *Oidium* sp. Hill Station (Colony), 12.8.35, M 705A ; Lumley beach (colony), 28.3.35, M 705B. *Parodiella perisporioides* (Berk. & Curt.) Speg. Newton (Colony), 23.8.31, M 351A ; Tisana (Dema), 15.11.31, M 351B ; Njala (Kori), 10.1.35, M 681. Also at Lumley beach (Colony).

Cucumis Melo Linn., Melon.

On leaves : *Oidium* sp. Njala (Kori).

Cucumis sativus Linn., Cucumber.

On leaves : *Cercospora Cucurbitae* Ell. & Ev. Njala (Kori), 5.12.29, M 300. *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), December 1933, M 632. *Oidium* sp. Njala (Kori), Hill Station (Colony), Kenema (Nongowa). *Phyllosticta* sp., possibly *P. Cucurbitacearum* Sacc. Njala (Kori), 5.12.29, M299.

Cucurbita Pepo Linn., Pumpkin.

On leaves : *Oidium* sp. Njala (Kori), Kenema (Nongowa). *Phyllosticta* sp., possibly *P. Cucurbitacearum* Sacc. Tabe (Kowa), 22.9.35, M 841.

Cynometra leonensis Hutch. & J. M. Dalz.

On trunk : *Trametes Meyenii* Kl. Probably on this host, Sumbuya (Lubu), 8.11.31, M 366.

Cyperus Zollingeri Steud.

On inflorescence : *Cintractia peribebuyensis* Speg. Kichom (Samu), 6.1.28, M 172.

Daucus Carota Linn., Carrot.

On leaves : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), 8.1.31, M 337C.

Deinbollia pinnata Schum. & Thonn.

On leaves : *Cercospora* sp. Njala (Kori), 18.3.33, M 448 ; Newton (Colony), 28.6.35, M 742.

Delonix regia Raf. (*Poinciana regia* Boj.), Flamboyante.

On trunk : *Theissenia pyrenocrata* (Theiss. ?) Maubl. Hill Station (Colony), 2.4.27, M 130.

Desmodium linearifolium G. Don.

On leaves : *Parodiella perisporioides* (Berk. & Curt.) Speg. Kissy (Colony), 14.11.34, M 670.

Dianthus chinensis Linn. var. **Heddewigii** Regel.

On stems : *Sclerotium* sp. of *S. Rolfsii* group. Hill Station (Colony), March 1935.

Digitaria longiflora Pers.

On inflorescence : *Ustilago Rabenhorstiana* Kuehn. Tombo (Mambolo), 7.1.28, M 171.

Digitaria seminuda Stapf.

On inflorescence : *Ephelis japonica* P. Henn. Njala (Kori), 23.7.27, M 161.

Dioscorea cayennensis Linn., Yellow Yam.

Mosaic (virus).

Dioscorea esculenta Burkill, Chinese Yam.

On leaves and tubers : *Sclerotium* sp. *S. Rolfsii* group. Leaf spot, Njala (Kori), 1.12.28, M 232 ; Makump (Mapaki), 2.10.28, M 232A.

Dioscorea hirtiflora Benth.

On leaves : *Cercospora* sp. Njala (Kori), 18.10.28, M 240.

Dioscorea praehensilis Benth., Wild Yam.

On stems : *Bagnisiopsis Dioscoreae* Wakef. Njala (Kori), 18.10.28, M 636.

Dioscorea rotundata Poir., White Yam.

On stems, and rarely on petioles and larger veins of leaves : *Bagnisiopsis Dioscoreae* Wakef. Njala (Kori), September 1928, M 200. Also at Makump (Mapaki) and Newton (Colony).

Dioscorea sp. (FCD 2872), Wild Yam.

On stems : *Bagnisiopsis Dioscoreae* Wakef. Njala (Kori), March 1933, M 637.

Dioscoreophyllum tenerum Engl.

On leaves : *Cercospora* sp. Njala (Kori), 20.10.33, M 504.

Dodonaea viscosa Linn.

On leaves : *Cercospora* sp. Njala (Kori), 10.1.31, M 324.

Dolichos biflorus Linn.

On leaves and stems : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), January 1932, M 629.

Dolichos Lablab Linn.

On leaves and stems : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori).

Dracaena Smithii Baker.

On leaves : *Colletotrichum gloeosporioides* Penz. Njala (Kori), 7.3.34, M 612.

Elaeis guineensis Jacq., Oil Palm.

Juvenile or Crown disease (? physiological).

On leaves and seedlings : *Pestalozzia palmarum* Cooke.

On leaves of young palms : *Corticium Solani* (Prill. & Del.) Bourd. & Galz., probably. On "Deli" palms. Njala (Kori), 13.2.32, M 378.

On fruit : *Botryodiplodia Theobromae* Pat. Njala (Kori), 1.3.34, M 614E. *Glomerella cingulata* (Stonem.) Spauld & von Schrenk. Njala (Kori), 1.3.34, M 614A. *Hypomyces Ipomoeae* (Halst.) Wollenw. Njala (Kori), 1.3.34, M 614D.

Elephantopus spicatus Aubl.

On leaves : *Oidium* sp. Hill Station (Colony), 30.5.35, M 723.

Erythrina senegalensis DC.

On leaves : *Meliola bicornis* Wint. Bonthe, 26.3.32, M 384.

Eulophia cristata Steud.

On leaves : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori).

Euphorbia hirta Linn.

On leaves : *Oidium* sp. Newton (Colony), 27.6.35, M 734.

Fimbristylis dichotoma Vahl.

On leaves : *Puccinia Fimbristylidis* Arth. Njala (Kori), 24.9.26, M 31.

On inflorescence : *Cintractia axicola* (Berk.) Cornu. Njala (Kori), 24.9.26, M 31.

Gaillardia aristata Pursh.

On stems : *Sclerotium* sp. of *S. Rolfsii* group. Newton (Colony), June 1935.

Gerbera Jamesoni Bolus.

On leaves : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

Gliricidia maculata H.B.K.

On leaves : *Meliola bicornis* Wint. Njala (Kori), 8.3.32, M 383.

Gossypium spp., Cotton.

Leaf Curl (virus). On " Kwande " (*G. hirsutum* Linn.) in mosaic form. Bedu (Kisi Tungi), 1925, Jones. Leaf Roll (physiological). On " Allen " and rarely on " Kwande ", 1925, Jones.

On leaves and stems : *Bacterium Malvacearum* E. F. Sm. Common.

On leaves : *Cerotelium desmii* (Berk. & Br.) Arth. Njala (Kori), 1924 ; on *G. hirsutum*, Batkanu (Gombahun), 16.1.34, M 569 ; on *G. peruvianum*, Njala (Kori), 31.12.35, M 941A ; on *G. hirsutum*, Njala (Kori), 31.12.35, M 941B.

Gynura cernua Benth.

On leaves : *Cercospora* sp. Newton (Colony), 14.2.35, M 709.

Hedychium coronarium Koenig.

On stems : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

Helianthus tuberosus Linn., Jerusalem Artichoke.

On leaves, stems and tubers : *Sclerotium* sp. of *S. Rolfsii* group Njala (Kori).

Hevea brasiliensis Muell. Arg., Para Rubber.

On trunk : *Ustilina zonata* Lév. Kenema (Nongowa), 15.11.26, M 51.

On twigs : *Cephaleuros mycoidea* Karst. Njala (Kori), 1925, Dunlap.

Hibiscus esculentus Linn., Okra.

On leaves : *Irenopsis Mælleriana* (Wint.) Stev. Njala (Kori), 14.11.33, M 498. *Oidium* sp. Njala (Kori), 14.11.33, M 499.

Hibiscus Sabdariffa Linn.

On leaves : *Aecidium Garckeanum* P. Henn. Newton (Colony), 2.8.35, M 783. *Irenopsis Mælleriana* (Wint.) Stev. Njala (Kori), 19.11.30, M 320 ; Tiama (Kori), 26.12.33, M 550.

Hibiscus Scottellii Bak.f.

On leaves : *Irenopsis Mælleriana* (Wint.) Stev. Yoni (Sitia), 10.11.31, M 359.

Hibiscus surattensis Linn.

On leaves and calyx : *Aecidium Garckeanum* P. Henn. Njala (Kori), 5.12.28, M 220.

Hippeastrum equestre (Ait.) Herb., Red " Lily ".

On leaves and bulbs : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

Holarrhena africana A. DC.

On leaves : *Meliola simillima* Ell. & Ev. Njala (Kori), 27.1.33, M 425 ; 2.4.33, 425B.

Hydrangea opuloides Koch.

On leaves : *Cercospora canescens* Ell. & Mart. Njala (Kori), 7.12.34, M 665. *Colletotrichum* sp. Njala (Kori), 7.12.34, M 665A.

Hymenocardia Heudelotii Muell. Arg.

On leaves : *Cercospora* sp. Njala (Kori), 12.2.34, M 607.

Hyptis brevipes Poit.

On leaves : *Cercospora* sp. Njala (Kori), 3.11.33, M 505.

Impatiens Balsamina Linn., Garden Balsam.

On leaves : *Oidium* sp. Hill Station (Colony), 30.5.35, M 712. Common. *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori).

Impatiens sultani Hook. f. (Garden hybrids).

On leaves : *Myrothecium* sp., probably *M. roridum* Tode. Njala (Kori), 4.10.33, M 484.

Imperata cylindrica Beauv. var. **Koenigii** Dur. & Schinz, Lalang Grass.

On leaves : *Puccinia rufipes* Diet. Njala (Kori), 15.6.27, M 152.

Indigofera sp.

Mosaic (virus). Tabe (Kowa), 1935.

Ipomoea Batatas Poir., Sweet Potato.

On leaves : *Phyllosticta Batatae* Thuem. Boltum (Turtle Is.), 15.11.31, M 360 ; Njala (Kori), 24.7.35, M 772.

On roots : *Monilochaetes infuscans* (Ell. & Halst.) Harter. Njala (Kori), 19.12.29, M 298.

Ipomoea cairica Sweet.

On leaves : *Meliola clavulata* Wint. Rokupr (Samu), 29.1.35, M 697.

Ipomoea digitata Linn.

On leaves : *Puccinia Batatae* Syd. Njala (Kori), 12.1.27, M 126 ; 25.5.27, M 147 ; June 1927, M 162.

On leaves and stems : *Cystopus Ipomoeae-panduratae* (Schw.) Stev. & Swing. Njala (Kori), 25.6.27, M 151.

***Ipomoea involucrata* P. Beauv.**

On leaves : *Cercospora Batatae* Zimm. Njala (Kori), 14.11.33, M 503.

***Ipomoea Learii* Lindl.**

On leaves and stems : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), December 1933, M 631. *Meliola clavulata* Wint. Njala (Kori), 5.12.32, M 408.

***Ipomoea purpurea* Lam. (*Convolvulus major* Hort.).**

On leaves : *Cercospora Ipomoeae* Wint. Njala (Kori), 6.1.34, M 574.

On leaves and stems : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori).

***Ipomoea setifera* Poir.**

On leaves : *Cercospora Batatae* Zimm. Rokupr (Samu), 27.1.35, M 688. *Meliola clavulata* Wint. Rokupr (Samu), 27.1.35, M 689.

***Ixora coccinea* Linn.**

On leaves : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

***Ixora lutea* Hutch.**

On leaves : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

***Jacquemontia pentantha* (Jacq.) G. Don.**

On leaves : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

On leaves, stems and flowers : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori).

***Jasminum pauciflorum* Benth.**

On leaves : *Aecidium jasminicola* P. Henn. Njala (Kori), 12.3.34, M 654 and 19.5.34, M 654A ; Hill Station (Colony), 25.5.35, M 717.

***Jasminum pubescens* Willd.**

On leaves and, more rarely, on stems : *Sclerotium coffeicola* Stahel. Njala (Kori), August 1933, M 468.

***Jatropha podagrica* Hook.**

On blossoms : *Botrytis cinerea* Pers. Njala (Kori), 25.12.32, M 419B.

***Lactuca sativa* Linn., Lettuce.**

On leaves : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori).

***Lagenaria vulgaris* Linn., Calabash.**

On leaves : *Cercospora Cucurbitae* Ell. & Ev. Near Njala (Kori), 24.1.29, M 246. *Oidium* sp. Njala(Kori).

Leptoderris fasciculatus *Dunn.*

On leaves : *Cymatella* sp. Njala (Kori), 11.2.35, M 702 ; Hill Station (Colony), 25.5.35, M 718 ; Newton (Colony), 26.6.35, M 739. *Meliola bicornis* Winter. Njala (Kori), 3.12.33, M 512 ; Newton (Colony), 26.6.35, M 737.

Lochnera rosea *Reichb.*, Periwinkle.

Rosette disease (probably virus). Njala (Kori), 1931.

On leaves and stems : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), 24.6.31, M 626.

Lonchocarpus cyanescens *Benth.*

On leaves : *Meliola bicornis* Winter. Njala (Kori), 29.12.33, M 548.

Luffa acutangula *Roxb.*

On leaves : *Myrothecium roridum* Tode. Tabe (Kowa), 22.9.35, M 842.

Luffa cylindrica *Roem.*, Loofa.

On leaves : *Cercospora Cucurbitae* Ell. & Ev. Njala (Kori), 19.10.31, M 357B ; Robat (Samu), 6.8.35, M 789. *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori), 19.10.31, M 357A.

Lycopersicum esculentum *Mill.*, Tomato.

On leaves : *Cercospora* sp., apparently *C. canescens* Ell. & Mart. Njala (Kori), 12.2.34, M 606. *Cladosporium fulvum* Cooke. Njala (Kori), 6.1.34, M 586. Also at Kenema (Nongowa).

In stems : *Bacterium Solanacearum* E.F.Sm., probably. Njala (Kori), Kenema (Nongowa) and apparently fairly widespread.

On stems : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

On fruit : Blossom-end rot (physiological).

Mangifera indica *Linn.*, Mango.

On leaves, twigs, blossoms and fruit : *Gloeosporium Mangiferae* P. Henn. Njala (Kori), 7.3.29, M 647 ; 21.4.34, M 647A. Also in Colony.

On leaves : *Coniothyrium* sp. Njala (Kori), 16.11.32, M 404.

Manihot Glaziovii *Muell. Arg.*, Ceara Rubber.

Mosaic (virus). Cline Town and Wilberforce (Colony).

On leaves : *Cercospora Henningsii* Allesch. Rokupr (Samu), 28.1.35, M 691. Apparently rare.

Manihot utilissima *Pohl*, Cassava.

Mosaic (virus). Common in Southern Province and Colony, and in Western chiefdoms of Northern Province.

On leaves : *Cercospora Henningsii* Allesch. Njala (Kori), 11.10.33, M 486. Widespread and common. *Ragnhildiana Manihotis* Stev. & Solh. Njala (Kori), 11.10.33, M 487. Widespread and common.

On stems : *Gloeosporium Manihotis* P. Henn. Njala (Kori), 7.9.31, M 474.

On roots, in store : *Sphaerostilbe repens* Berk. & Br. Njala (Kori).

Mariscus umbellatus Vahl.

On inflorescence : *Cintractia limitata* Clint. Njala (Kori), 23.5.27, M 144 ; Newton (Colony), 26.6.35, M 745.

Melochia melissifolia Benth.

On leaves : *Cercospora* sp. Njala (Kori), 9.7.35, M 756A ; Robat (Samu), 6.8.35, M 756B.

Microglossa volubilis DC.

On leaves : *Irenina cyclopoda* Stev. Njala (Kori), 23.1.34, M 556.

Millettia rhodantha Baill.

On leaves : *Uromyces* sp. Njala (Kori), 17.12.34, M 671.

Mirabilis Jalapa Linn., Marvel of Peru.

On leaves and stem : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori).

Mucuna aterrima Holland, Bengal Bean.

On leaves : *Cercospora Stizolobii* Syd. Njala (Kori), 1.12.28, M 236 ; Newton (Colony), 3.8.35, M 779A. *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), 1.12.33, M 630. *Meliola bicornis* Winter. Njala (Kori), 1.12.28, M 223.

Mucuna pruriens DC.

On leaves : *Cercospora Stizolobii* Syd. Robat (Samu), 6.8.35, M 779B.

Mucuna urens DC.

On leaves : *Uromyces illotus* Arth. & Holw. Njala (Kori), 13.12.29, M 301.

Musa Cavendishii Lambert, Canary Banana.

On leaves : *Helminthosporium torulosum* (Syd.) Ashby. Widespread. *Rhinotrichum* sp. Njala (Kori), 13.10.33, M 489. Common. Also at Batkanu (Gombahun) and Newton (Colony). *Scolecotrichum Musae* Zimm. (*Cordana musae* (Zimm.) von Hoehn.) Widespread.

On pseudostems : *Marasmius stenophyllus* Mont. Makump (Mapaki), Njala (Kori), Freetown (Colony).

In pseudostems : *Bacterium Solanacearum* E.F.Sm., probably. Wilt. Newton (Colony), 1935.

On fruit : *Gloeosporium Musarum* Cooke & Mass. Njala (Kori). *Helminthosporium torulosum* (Syd.) Ashby. Njala (Kori), Newton (Colony). *Stachylidium Theobromae* Turc. Njala (Kori), and near Freetown (Colony).

Musa paradisiaca Linn., Plantain.

On leaves : *Rhizotrichum* sp. Njala (Kori).

On pseudostems : *Marasmius stenophyllus* Mont. Makump (Mapaki).

Musa sapientum Linn., Banana.

On leaves : *Helminthosporium torulosum* (Syd.) Ashby. Widespread *Rhizotrichum* sp. Njala (Kori). *Scolecotrichum Musae* Zimm. (*Cordana musae* (Zimm.) von Hoehn.) Njala (Kori), 24.1.29, M 250. Widespread.

On pseudostems : *Fusarium oxysporum* Schlecht var. *cubense* (E.F.Sm.) Wollenw. & Reink. Widespread. On all varieties. Isolated from " Pseudo-Lacatan ", Njala (Kori), 1929. *Marasmius stenophyllus* Mont. Makump (Mapaki), 3.2.30, M 309.

Nerium Oleander Linn., Oleander.

On blossoms : *Botrytis cinerea* Pers. Njala (Kori), 9.1.34, M 591.

Nicotiana rustica Linn., Tobacco.

On leaves : *Cercospora Nicotianae* Ell. & Ev. Kabala (Warawara Yagala), December 1932, M 420A.

Nicotiana Tabacum Linn., Tobacco.

On leaves : *Cercospora Nicotianae* Ell. & Ev. Near Njala (Kori), 3.1.33, M 420B.

Ocimum viride Willd.

On leaves : *Meliola microspora* Pat. & Gaill. Near Njala (Kori) 24.1.29, M 247.

Oplismenus hirtellus Beauv.

On small buds in leaf axils : *Epichloe Oplismeni* P. Henn. Njala (Kori), 18.7.27, M 155.

Oryza glaberrima Steud., Rice.

On glumes : *Helminthosporium Oryzae* van Breda. Njala (Kori), 7.12.33, M 622. Apparently very rare.

Oryza sativa Linn., Rice.

On leaves : *Piricularia Oryzae* Bri. & Cav. Rokupr (Samu), June 1935, M 761A ; July 1935, M 761B. also at Makump (Mapaki) and Njala (Kori).

On leaves and glumes : *Helminthosporium Oryzae* van Breda. Njala (Kori), 2.10.28, M 227. Common everywhere. *Nigrospora Oryzae* (Berk. & Br.) Petch. Njala (Kori), August 1935, M 761C.

On grain : *Ustilaginoides virens* (Cooke) Tak. Shenge (Kagboro), 18.9.29, M 294A ; Njala (Kori), 20.9.29, M 294B ; also at Mano (Dasse), 1933, and Mopele (Kagboro), 1930.

Ostryoderris leucobotrya Dunn.

On leaves : *Meliola bicornis* Winter. Njala (Kori), 4.12.33, M 518 ; Newton (Colony), 26.6.35, M 736.

Panicum maximum Jacq., Guinea Grass.

On leaves : *Cercospora fusimaculans* Atk. Njala (Kori), 9.9.33, M 465.

Parinari excelsa Sabine, Rough-skinned Plum.

On trunk : *Fomes pachyphloeus* Pat. Near Gene (Soro), 26.11.26, M 86. *Ganoderma lucidum* (Leyss.) Karst. Njala (Kori), 18.5.27, M141.

Parkia bicolor A. Chev.

On trunk : *Fomes pachyphloeus* Pat. Near Mabonto (Simiria), 1928.

Paspalum scrobiculatum Linn.

On leaves : *Myriogenospora Paspali* Atk. Njala (Kori), 5.12.29, M 293. *Phyllachora sphaerosperma* Winter Hill Station (Colony), 30.12.26, M 134. *Puccinia* sp., probably *P. substriata* Ell. & Barth. Njala (Kori), 24.9.26, M 32.

On inflorescence : *Ephelis japonica* P. Henn. Njala (Kori), 8.8.27, M 163.

On grains : *Sphacelia* sp. Njala (Kori), 30.10.33, M 510.

Paullinia pinnata Linn.

On leaves : *Meliola Paullinae* Stevens. Njala (Kori), 23.3.29, M 260.

Pavetta nitida Hutch. & J. M. Dalz.

On leaves : *Aecidium flavidum* Berk. & Br. Hill Station (Colony), December 1926, M 133 and 29.5.35, M 720.

Pennisetum leonis Stapf & C. E. Hubbard.

On inflorescence : *Sclerospora graminicola* (Sacc.) Schroet. Njala (Kori), 25.11.29, M 286 : November 1933, M 542.

On grains : *Sphacelia* sp. Njala (Kori), 7.12.29, M 287. *Ustilago Penniseti* (Kunze) Rabenh. Njala (Kori), December 1926, M 122. Also at Kambia (Magbema) and Rokupr (Samu).

On leaves : *Puccinia Penniseti* Zimm. Njala (Kori), 27.11.35, M 916.

Pennisetum polystachyon Schult.

On leaves : *Phyllachora sphaerosperma* Winter (*Sphaerodopsis sphaerosperma* (Wint). Stev. & Moore). Hill Station (Colony), 5.10.26, M 35 ; Newton (Colony), 3.8.35, M 781C.

Pennisetum subangustum (Schum.) Stapf & C.E. Hubbard.

On leaves : *Phyllachora sphaerosperma* Winter. Freetown (Colony), 13.10.26, M 34. *Puccinia* sp. Njala (Kori), 3.12.29, M 292.

Persea gratissima Gaertn. f., Avocado.

On blossoms : *Botrytis cinerea* Pers. Njala (Kori), 25.12.32, M 419.

On seedling : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

On fruit : *Colletotrichum gloeosporioides* Penz. Njala (Kori).

Petroselinum hortense Hoffm., Parsley.

On leaves : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), 15.8.30, M 337F.

Petunia hybrida Vilm.

On leaves : *Cercospora canescens* Ell. & Mart. Hill Station (Colony), 21.5.35, M 716.

Phaseolus aconitifolius Jacq.

On leaves and stems : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), 25.8.31, M 354D.

Phaseolus coccineus Linn., Scarlet Runner Bean.

On stems of seedlings : *Macrophomina Phaseoli* (Mauubl.) Ashby. Njala (Kori), April, 1935, M 749.

On leaves and stems : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori).

Phaseolus lunatus Linn.

Mosaic (virus).

On leaves and stems : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori). *Sclerotium* sp. of *S. Rolfsii* group. Makene (Bombali Seburu).

Phaseolus vulgaris Linn., Dwarf French Bean.

Mosaic (virus).

On leaves : *Cercospora canescens* Ell. & Mart. Njala (Kori), 5.12.29, M 295. *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori). Also on stems and pods.

On stems : *Macrophomina Phaseoli* (Mauubl.) Ashby. Njala (Kori), 2.3.34, M 611B ; Hill Station (Colony), 26.3.35, M 707. *Pythium* sp. near *P. myriotylum* Drechsl. Wilt of seedlings. Njala (Kori), October 1935. *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori)

On pods : *Alternaria macrospora* Zimm. Njala (Kori), February 1932, M 377. *Cercospora canescens* Ell. & Mart. Njala (Kori), February 1932, M 377. *Helminthosporium gigasporum* Berk. & Br. subsp. *javanicum* Penz. & Sacc. Njala (Kori), February 1932, M 377.

Phialodiscus unijugatus Radlk.

On leaves : *Meliola* ? *capensis* (Kalchlr. & Cooke) Theiss. var. Njala (Kori), January 1932, M 361.

Phlox Drummondii Hook.

On leaves : *Oidium* sp. Hill Station (Colony), 21.5.35, M 714.

On stems : *Sclerotium* sp. of *S. Rolfsii* group. Newton (Colony) ; Hill Station (Colony).

Phyllanthus discoideus Muell. Arg.

On leaves : *Aecidium* ? *Phyllanthi* P. Henn. Makene (Bombali

Sebura), 15.1.34, M 567 ; Rokupr (Samu), 29.1.35, M 693 ; Njala (Kori), 31.12.35, M 942. *Cercospora* sp. Njala (Kori), 4.11.33, M 501.

***Physalis angulata* Linn.**

On leaves : *Cercospora physalicola* Ell. & Barth. Njala (Kori), 25.7.35, M 752.

***Physalis peruviana* Linn., Cape Gooseberry.**

Leaf Crinkle (virus), probably the same as on *Capsicum*. Njala (Kori), 1928.

On leaves : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), December 1933, M 634.

***Pilea muscosa* Lindl.**

On leaves and stems : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori). *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

***Piper umbellatum* Linn.**

On leaves and stems : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori).

***Plumeria rubra* Linn., Frangipani.**

On leaves : *Irenina* ? *escharoides* (H. Syd.) Stev. Njala (Kori), 3.12.33, M 513.

***Porana paniculata* Roxb.**

On leaves and stems : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), December 1933, M 633.

***Pouzolzia guineensis* Benth.**

On leaves : *Cercospora* sp. Njala, 20.10.33, M 502.

***Psidium Guajava* Linn., Guava.**

On roots : ? *Armillaria mellea* (Vahl.) Fr. Makump (Mapaki), 1929

***Pteridium aquilinum* Kuhn.**

On leaves : *Uredinopsis macrosperma* Magn. Njala (Kori), 2.12.34, M 662.

***Pterocarpus santalinoides* L'Hér.**

On leaves : *Meliola bicornis* Wint. Njala (Kori), 12.2.32, M 374.

***Pueraria phaseoloides* Benth.**

On leaves : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori).

***Randia maculata* DC.**

On leaves : *Meliola Psychotriae* Earle. Njala (Kori), 22.2.33, M 434.

Rauwolfia vomitoria Afz.

On leaves : *Meliola simillima* Ell. & Ev. Njala (Kori), 21.3.33, M 444 ; Rokupr (Samu), 29.1.35, M 704. *Cercospora* sp. Njala (Kori), 2.2.34, M 605 ; Newton (Colony), 2.8.35, M 786.

Rhynchospora corymbosa Britton.

On inflorescence : *Cintractia leucoderma* (Berk.) P. Henn. Near Gegbwema (Tunkia), 17.11.26, M 64 ; Mambolo (Mambolo), 5.1.28, M 170 ; Njala (Kori), 24.12.30, M 334. *Cintractia* sp. Njala (Kori), 16.6.33, M 462.

Ricinus communis Linn., Castor-oil.

On leaves : *Cercosporina ricinella* (Sacc. & Berl.) Speg. Newton (Colony), 16.11.34, M 658. *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), 1.9.26, M 28.

Rinorea liberica Engl.

On leaves : *Myrothecium voridum* Tode. Njala (Kori), 2.2.34, M 604.

Rosa spp. Rose.

On leaves : *Diplocarpon Rosae* (Lib.) Wolf. Freetown (Colony), 6.11.26, M 39. Common at Njala (Kori) and elsewhere. *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori).

Rottboellia exaltata Linn.

On leaves : *Uredo Rottboelliae* Diet. Njala (Kori), 4.1.30, M 305.

On inflorescence : *Ustilago flagellata* Syd. Njala (Kori), 22.11.28, M 272.

Sabal glabra (Mill.) Sarg.

On leaves : *Fusarium sambucinum* Fuck. form 6 Wr. (*F. discolor* var *sulphureum* (Sch.) App. & Wr.). Njala (Kori), 20.9.33, M 475.

Saccharum officinarum Linn., Sugar Cane.

On leaves : *Leptosphaeria Sacchari* van Breda. Gloucester (Colony), 6.8.26, M 3. Common everywhere.

Saccharum spontaneum Linn. var. aegyptiacum Hack.

On leaves : *Septoriella philippinensis* Sacc. Rokupr (Samu), 29.1.35, M 700.

Salvia coccinea Linn.

On leaves and stems : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

Salvia farinacea Benth.

On leaves and stems : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), December 1931, M 628.

Sanchezia nobilis Hook. f.

On leaves: *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori).

Scytopetalum Tieghemii Hutch. & J. M. Dalz.

On leaves: *Cercospora* sp. Njala (Kori), 3.12.28, M 237.

Sesamum orientale Linn., Beni.

On leaves: *Cercospora Sesami* A. Zimm. Njala (Kori), 2.10.33, M 464A.

Sesamum radiatum Schum.

Mosaic (virus).

On leaves: *Cercospora Sesami* A. Zimm. Njala (Kori), 14.7.33, M 464.

Sida carpinifolia Linn. f.

Mosaic and leaf curl. Probably virus.

Sida linifolia Cav.

On leaves: *Irenopsis Moelleriana* (Wint.) Stev. Njala (Kori), 4.10.28, M 208.

Sida urens Linn.

Mosaic (virus).

On leaves: *Puccinia heterospora* Berk. & Curt. Njala (Kori), 20.11.28, M 221 ; Jama (Kowa), 22.9.35, M 822.

Solanum duplosinuatum Klotzsch.

On leaves: *Piricularia* sp. Njala (Kori), 26.12.33, M 587.

Solanum Melongena Linn., Egg-plant.

On leaves: *Aecidium tubulosum* Pat. & Gaill. forma *africana* P. Henn. Njala (Kori), 1.4.32, M 390 ; Masanki (Kolifa Mabang), 26.4.32, M 390A. *Cercospora Melongenae* Well. Njala (Kori), 17.12.28, M 239. *Piricularia* sp. Njala (Kori), 23.11.33, M 522.

On stem: *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

On fruit: *Colletotrichum Capsici* (Syd) Butl. & Bisby. Njala (Kori), 25.12.33, M 590. *Gloeosporium Melongenae* Sacc. Njala (Kori), 25.12.33, M 590. *Phyllosticta hortorum* Speg. ? Near Njala (Kori), February 1934, M 613.

Sorghum gambicum Snowden var. **celsum** Snowden, Guinea Corn.

On grains: *Sphacelotheca Sorghi* (Link) Clinton. Makump (Mapaki), December 1928, M 218, one record ; now presumed completely eliminated.

On heads: *Curvularia lunata* (Wakker) Boedijn. *Cercospora Sorghi* Ell. & Ev. *Clasterosporium Maydicum* Sacc. *Phoma insidiosa* Tassi. Above records from Makump (Mapaki), 11.12.29, M 297.

On leaves: *Helminthosporium turcicum* Passer. Njala (Kori), 25.7.35, M 753.

Sorghum margaritiferum Stapf var. **margaritiferum** Snowden,
Guinea Corn.

In grains : *Sphacelotheca Sorghi* (Link) Clinton. Kabala (Warawara Yagala), 17.11.30, M 316 (only record).

On heads : *Curvularia lunata* (Wakker) Boedijn. *Fusarium herbarum* (Corda) Fr. *Clasterosporium Maydicum* Sacc Above records from Kambia (Magbema), 28.12.27, M 176.

On leaves : *Cercospora Sorghi* Ell. & Ev. Njala (Kori), 7.11.29, M 296. *Helminthosporium turcicum* Passer. Njala (Kori), 6.9.33, M 467.

Spigelia Anthelmia Linn.

On leaves : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), 17.6.35, M 724. Also at Newton (Colony). *Oidium* sp. Njala (Kori), 28.1.34, M 602.

Sterculia Tragacantha Lindl.

On leaves and stems of seedling : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Newton (Colony), 29.6.35, M 754.

Streptogyne gerontogaea Hook. f.

On inflorescence : *Balansia* sp. cf. *B. Andropogonis* Syd. Gorahun (Tunkia), 23.11.26, M 80.

Tagetes erecta Linn., African Marigold.

On leaves : *Cercospora tagetica* Ell. & Ev. Njala (Kori), 31.10.35, M 875.

On flower heads : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori). *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

Tamarindus indica Linn., Tamarind.

On leaves : *Exosporium Tamarindi* H. Syd. Njala (Kori), 10.2.33, M 432A.

Telanthra Bettzickiana Regel, Ornamental "Alternanthera".

On stems : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori); Newton (Colony). *Macrophomina Phaseoli* (Maubl.) Ashby. Njala (Kori), 12.1.35, M 683; Newton (Colony), 9.6.35, M 721.

Theobroma Cacao Linn., Cacao.

On twigs : *Botryodiplodia Theobromae* Pat. Common, in marshy situations etc. *Corticium salmonicolor* Berk. & Br. Limba (Bagbor), September 1928, M 196; Gandohun (Malen), Wukoia (Bari), and Makump (Mapaki), October 1928. *Marasmius scandens* Mass. White thread. Makump (Mapaki), 23.8.28, M 185; and elsewhere. Common. *Marasmius* sp. cf. *M. equicrinis* Muell. Horse-hair blight. Wukoia (Bari), 12.4.29, M 279B; and elsewhere. Frequent.

On trunk : *Armillaria mellea* (Vahl) Fr. Collar crack. Makump (Mapaki), 1929. *Phytophthora palmivora* Butl. Canker. Frequent.

On pods : *Botryodiplodia Theobromae* Pat. Brown pod rot. Common. *Phytophthora palmivora* Butl. Black pod rot. Frequent.

Thevetia neriifolia Juss.

On leaves and stems : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), 28.11.30, M 337A.

On fruit : *Colletotrichum* sp. Njala (Kori).

Thunbergia fragrans Roxb.

On leaves : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

Tigridia Pavonia Ker.

On leaves and stems : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

Trichosanthes Anguina Linn., Snake Gourd.

On leaves and stem : *Cercospora Cucurbitae* Ell. & Ev. Newton (Colony), 3.8.35, M 780. *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Newton (Colony). *Myrothecium roridum* Tode. Newton (Colony), 3.8.35, M 780B ; Njala (Kori), 17.9.35, M 849A. *Phyllosticta* sp. probably *P. Cucurbitacearum* Sacc. Njala (Kori), 17.9.35, M 849B.

Trimezia martinicensis Herb.

On leaves and stems : *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

Urena lobata Linn.

On leaves : *Irenopsis Moelleriana* (Wint.) Stev. Njala (Kori), 14.11.33, M 490 ; Newton (Colony), 27.6.35, M 738.

Vicia Faba Linn., Broad Bean.

On leaves and stems : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), 27.8.31, M 627.

Vigna unguiculata (Linn.) Walp., Cow Pea.

Mosaic (virus).

On leaves and pods : *Cercospora canescens* Ell. & Mart. Makump (Mapaki), 8.2.29, M 258 ; also at Njala (Kori) and elsewhere. Common

On leaves and stems ; *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori).

On stems : *Macrophomina Phaseoli* (Maubl.) Ashby. Njala (Kori), 2.3.34, M 611A. *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

Vigna sp. near **V. racemosa** Hutch. & J. M. Dalz. (FCD 2953).

Mosaic. Probably virus.

Vitex cuneata Thom.

On leaves : *Meliola rizalensis* H. & P. Syd. Batkanu (Gombahun) 15.1.34, M 564 ; Tabe (Kowa), 21.9.35, M 828.

Vitex micrantha Guerke.

On leaves : *Meliola rizalensis* H. & P. Syd. Njala (Kori), 19.2.34, M 615.

Vitis vinifera Linn., Grape.

On leaves : *Plasmopara viticola* (Berk. & Curt.) Berl. & de Toni. Njala (Kori), 9.10.32, M 418.

Voandzeia subterranea Thouars, Bambara Groundnut.

On leaves and stems : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori).

Waltheria lanceolata R. Br.

Mosaic. Probably virus.

On stems and leaves : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori).

Xanthosoma sagittifolium Schott, Tannier.

On leaf stalks : *Sclerotiums* p. of *S. Rolfsii* group. Njala (Kori).

Xylopia aethiopica A. Rich.

On leaves : *Aecidium* sp. Nyeyama (Peri), 14.4.29, M 263. *Cercospora* sp. Njala (Kori), 28.1.34, M 576.

Zea Mays Linn., Maize, Indian Corn.

On leaves : *Curvularia lunata* (Wakker) Boedijn. Mapaki (Mapaki), 24.8.28, M 203; and elsewhere. *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Moyamba (Gandima), 25.8.31, M 354. Form with small sclerotia. *Helminthosporium turcicum* Passer. Njala, 17.12.28, M 231 ; Mapaki (Mapaki), 24.8.28, M 203 ; and elsewhere. *Metasphaeria* sp. Mapaki (Mapaki), 24.8.28, M 203. *Physoderma Zeae-Maydis* Shaw. Njala (Kori), 13.7.28, M 201 ; also at Mayolo (Mapaki) and Moyamba and Levuma (Gandima).

On cobs : *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), 30.6.31, M 346. Form with large sclerotia as described by Bertus (Yearbook, Dept. Agric. Ceylon, 1929, p. 44). *Diplodia macrospora* Earle. Njala (Kori), 5.12.29, M 288. *Sclerotium* sp. of *S. Rolfsii* group. Newton (Colony), 25.8.31.

On husks and old male inflorescences : *Curvularia lunata* (Wakker) Boedijn. Njala (Kori), December 1929, M 290, 291. *Cercospora Sorghi* Ell. & Ev. Njala (Kori), December 1929, M 290. *Clasterosporium Maydicum* Sacc. Njala (Kori), December 1929, M 290. *Gibberella Saubinetii* (Mont.) Sacc. Njala (Kori), December 1929, M 290.

Leptosphaeria patellaeformis Passer. Njala (Kori), December, 1929, M 290. *Ophiobolus heterostrophus* Drechsl. (*Helminthosporium* stage) Njala (Kori), December 1929, M 289, M 291. *Phoma insidiosa* Tassi. Njala (Kori), December 1929, M 290, M 291.

Zephyranthes tubispatha Herb.

On bulbs: *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori). Also occurs on the leaves. *Sphaerostilbe repens* Berk. & Br. Njala (Kori). 11.11.35, M 871B.

Zingiber officinalis Roscoe, Ginger.

On leaves: *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori), September 1926, M 27.

Zinnia elegans Jacq.

In stem: *Bacterium Solanacearum* E.F.Sm., probably. Wilt. Newton (Colony).

On leaves and flowers: *Oidium* sp. Hill Station (Colony), 30.5.35, M 713, common; Newton (Colony), 3.8.35, M 713A.

On flower heads: *Corticium Solani* (Prill. & Del.) Bourd. & Galz. Njala (Kori). *Sclerotium* sp. of *S. Rolfsii* group. Njala (Kori).

XXIX—LIST OF FUNGI COLLECTED IN SIERRA LEONE.
F. C. DEIGHTON. (Plant Pathologist, Agricultural Department, Sierra Leone.)

The fungi in this preliminary list have been for the most part collected by the author since 1926 and identified by the staff of the Imperial Mycological Institute in co-operation with Miss. E. M. Wakefield, who has named most of the larger Basidiomycetes, and with Dr. Charles Chupp, who has revised some of the records of species of *Cercospora*. Through the courtesy of the Director of the Royal Botanic Gardens, Kew, the names of eleven fungi collected by Mr. N. W. Thomas in 1914 and identified by Miss E. M. Wakefield have been included and are distinguished by this collector's name. Besides these eleven, Mr. Thomas's collection included a few others which have been collected again several times more recently and to which therefore his name has not been added in this list. The record of *Clypeolum sparsum* is taken from Kew Bulletin, 1899, 183.

In order to facilitate cross-reference with the "Preliminary List of Fungi and Diseases of Plants in Sierra Leone" published in this same number of the Bulletin, the genera of the host plants of parasitic fungi have been given, and where it seems likely that the habitat of a saprophytic species is restricted, details of this have

also been given. Entomogenous fungi, many of which were identified by Mr. T. Petch, have been distinguished by an asterisk. The arrangement of the families follows that of Clements and Shear, "The Genera of Fungi" (1931).

MYXOMYCETES.

Arcyria cinerea Pers. var. *digitata* G. Lister.

Fuligo septica Gmel.

Lycogala epidendrum Fr. var. *exiguum* Lister.

Stemonitis herbatica Peck.

S. splendens Rost. (N. W. Thomas).

PHYCOMYCETES.

CHYTRIDIACEAE.

Phyoderma Zeae-Maydis Shaw, on *Zea*.

MUCORACEAE.

Absidia Lichtheimi (Luc. & Const.) Lendner.

Choanephora infundibulifera (Curr.) Sacc., on old blossoms and leaves.

Rhizopus nigricans Ehrenb.

Syncephalastrum cinereum Bain.

EMPUSACEAE.

**Empusa apiculata* Thaxt., on flies (*Ochromyia* sp. and *Paralimna adversa*).

**E. Fresenii* Nowak, on *Aphis laburni* on Groundnut.

*? *E. Grylli* (Fresen.) Nowak, on termites.

*? *Entomophthora Aphidis* Hoffm., on *Aphis medicaginis* on *Gliricidia*.

PERONOSPORACEAE.

Cystopus Ipomoeae-panduratae (Schw.) Stev. & Swing., on *Ipomoea*.

Phytophthora palmivora Butl., on *Theobroma*.

P. parasitica Dast. emend. Ashby, on *Citrus* and *Carica*.

Plasmopara viticola (Berk. & Curt.) Berl. & de Toni, on *Vitis*.

Pythium sp. near *P. myriotylum* Drechsl., on *Phaseolus*.

Sclerospora graminicola (Sacc.) Schroet., on *Pennisetum*.

ASCOMYCETES.

SACCHAROMYCETACEAE.

Saccharomyces Ludwigii Hansen, on *Citrus*.

ERYSIPHACEAE.

Oidium sp. on *Albizzia*, *Carica*, *Cissus*, *Crotalaria*, *Cucumis*, *Cucurbita*, *Elephantopus*, *Euphorbia*, *Hibiscus*, *Impatiens*, *Lagenaria*, *Phlox*, *Spigelia* and *Zinnia*.

PERISPORIACEAE.

- Irenina cyclopoda* Stev., on *Microglossa*.
I. ? escharoides (H. Syd.) Stev., on *Plumeria*.
I. glabra (Berk. & Curt.) Stev., on *Coffea*.
I. sepulta (Pat.) Stev., on *Avicennia*.
Irenopsis guaianensis (Stev. & Dowell) Stev., on *Cola*.
I. Moelleriana (Wint.) Stev., on *Hibiscus*, *Sida* and *Urena*.
Meliola bicornis Wint., on *Afzelia*, *Albizzia*, *Erythrina*, *Gliricidia*,
Leptoderris, *Lonchocarpus*, *Ostryoderris*, *Pterocarpus* and
Stizolobium.
M. ? capensis (Kalchbr. & Cooke) Theiss. var., on *Phialodiscus*.
M. clavulata Wint., on *Ipomoea*.
M. microspora Pat. & Gaill., on *Ocimum*.
M. Paullinae Stev., on *Paullinia*.
M. Psychotriae Earle, on *Randia*.
M. rizalensis H. & P. Syd., on *Vitex*.
M. simillima Ell. & Ev., on *Holarrhena* and *Rauwolfia*.
Parodiella perisporioides (Berk. & Curt.) Speg., on *Crotalaria* and
Desmodium.

SPHAERIACEAE.

- Ceratosphaeria lampadophora* (Berk. & Br.) Niessl.
Ceratostomella paradoxa Dade.
Daldinia angolensis (Welw. & Curr.) Sacc., on dead twig of
Ceiba pentandra.
D. Eschscholtzii (Ehrenb.) Rehm.
Eutyphella citricola Syd., on dead twig of *Citrus aurantifolia*.
Glomerella cingulata (Stonem.) Spauld. & von Schrenk, on
Capsicum, *Carica* and *Elaeis*.
Hypomyces Ipomoeae (Halst.) Wollenw., on *Citrus* and *Elaeis*.
Hypoxylon anthrochroum Berk. & Br.
H. haematostroma Mont.
Leptosphaeria patellaeformis Passer, on *Zea*.
L. Sacchari van Breda, on *Saccharum*.
Metasphaeria sp., on *Zea*.
Ophiobolus heterostrophus Drechsl., (conidial stage), on *Zea*.
Peroneutyphella pusilla Syd., on *Citrus*.
Thamnomycetes Chamissonis Ehrenb., (N. W. Thomas).
Theissenia pyrenocrata (Theiss. ?) Maubl., on *Delonix*.
Ustulina zonata Lév., on *Hevea*.
Xylaria grammica Mont., (N. W. Thomas).
X. haemorrhoidalis Berk. & Br.
X. plebeja Ces.

HYPOCREACEAE.

- Balansia* sp. cf. *B. Andropogonis* Syd., on *Streptogyne*.
 **Cordyceps Lloydii* Fawc., conidial stage (*Hymenostilbe for micarum*)
 on an ant.

- **C. tuberculata* (Leb.) Maire (*C. Sphingum* (Schw.) Sacc.), on noctuid and pyralid moths.
Epichloe Oplismeni P. Henn., on *Oplismenus*.
Gibberella Saubinetii (Mont.) Sacc., on *Zea*.
 **Hypocrella Reineckiana* P. Henn., on *Pulvinaria* sp. on *Anisophyllea laurina* and *Psidium Guajava*, and on *Saissetia nigra* on *Plumeria*.
 **H. sphaeroidea* Syd. (*H. olivacea* Petch), *Aschersonia* stage, on lecaniid scale insect on *Phoenix dactylifera*.
Megalonectria pseudotrichia Speg. (*Stilbum cinnabarinum* Mont.)
Neocosmospora vasinfecta E. F. Smith, on *Canavalia*.
 **Podonectria coccicola* (Ell. & Ev.) Petch (= *Tetracium coccicolum* von Höhnell), on *Dinaspis annae* and *Lepidosaphes* sp. on *Citrus*.
Sarcoxydon aurantiacum Pat.
Sphaerostilbe repens Berk. & Br., on *Carica*, *Manihot* and *Zephyranthes*.
Ustilaginoides virens (Cooke) Tak., on *Oryza*.

DOTHIDEACEAE.

- Bagnisiopsis Dioscoreae* Wakef., on *Dioscorea*.
Myriogenospora Paspali Atk., on *Paspalum*.
Phyllachora sphaerosperma Wint. on *Pennisetum* and *Paspalum*.

MYRIANGIACEAE.

- **Myriangium* sp., probably *M. Duriaei* Mont. & Berk., on mussel scale of *Citrus*.

POLYSTOMELLACEAE.

- Diplocarpon Rosae* (Lib.) Wolf, on *Rosa*.

MICROPELTACEAE.

- Clypeolum sparsum* Mass., on leaves of undetermined host (? Euphorbiaceae). (K.B., 1899).

DERMATEACEAE.

- Tryblidiella rufula* (Spreng.) Sacc. var. *microspora* Ell. & Ev.

PEZIZACEAE.

- Cookeina sulcipes* (Berk.) Kuntze.

BASIDIOMYCETES.

PUCCINIACEAE.

- Aecidium Blepharidis* Har. & Pat., on *Blepharis*.
A. bomolense Syd., on *Adenia*.
A. flavidum Berk. & Br., on *Pavetta*.
A. Garckeanum P. Henn., on *Hibiscus*.
A. jasminicola P. Henn., on *Jasminum*.

A. ? Phyllanthi P. Henn., on *Phyllanthus*.
A. tubulosum Pat. & Gaill. forma *africana* Henn., on *Solanum*.
Aecidium sp., on *Xylopia*.
Cerotelium desmium (Berk. & Br.) Arth., on *Gossypium*.
Hemileia Scholzii Syd., on *Clerodendron*.
Puccinia Andropogonis Schw., on *Andropogon*.
P. Batatae Syd., on *Ipomoea*.
P. Fimbristylidis Arth., on *Fimbristylis*.
P. heterospora Berk. & Curt., on *Sida*.
P. lateritia Berk. & Curt. on *Borreria*.
P. Penniseti Zimm., on *Pennisetum*.
P. rufipes Diet., on *Imperata*.
P. ? substriata Ell. & Barth., on *Paspalum*.
Puccinia sp., on *Pennisetum*.
Puccinosira Anthocleistae P. Henn., on *Anthocleista*.
? Mimema sp., on *Cassia*.
Uredinopsis macrosperma Magn., on *Pteridium*.
Uredo Cajani Syd., on *Cajanus*.
U. Rottboelliae Diet., on *Rottboellia*.
Uredo sp., on *Milletia*.
Uromyces illotus Arth. & Holw., on *Mucuna*.
U. leptodermus Syd., on *Brachiaria*.

USTILAGINACEAE.

Cintractia axicola (Berk.) Cornu, on *Fimbristylis*.
C. leucoderma (Berk.) P. Henn., on *Rhynchospora*.
C. limitata Clint., on *Mariscus*.
C. peribebuyensis Speg., on *Cyperus*.
Cintractia sp., on *Rhynchospora*.
Sphacelotheca Sorghi (Link) Clinton, on *Sorghum*.
Ustilago Penniseti (Kunze) Rabenh., on *Pennisetum*.
U. Rabenhorstiana Kuehn, on *Digitaria*.
U. flagellata Syd., on *Chasmopodium* and *Rottboellia*.

AURICULARIACEAE.

Hirneola Auricula-Judae Fr.
Septobasidium sp., on *Citrus*.

DACRYOMYCETACEAE.

Guepinia spathularia (Schw.) Fr. (N. W. Thomas).

THELEPHORACEAE.

Corticium salmonicolor Berk. & Br., on *Theobroma*.
C. Solani (Prill. & Del.) Bourd. & Galz. (*Rhizoctonia Solani* Kuehn), on numerous hosts, mainly cultivated plants.
Corticium spp. (*Sclerotium Rolfsii* group), on numerous hosts, mainly cultivated plants.
Stereum elegans Fr. (N. W. Thomas).
S. umbrinum Berk. and Curt.

POLYPORACEAE.

- Amauroderma rugosum* (Nees) Bres.
Fomes hornodermus (Mont.) Cooke.
F. noxius Corner, on *Cola*.
F. lignosus (Kl.) Bres.
F. pachyphloeus Pat., on *Parinari* and *Parkia*.
F. yucatanensis (Murr.) Sacc. & D. Sacc., on *Cathormion*.
Ganoderma applanatum (Pers.) Pat. var. *philippinense* Humphr.
G. Colossus (Fr.) Bres. (*N. W. Thomas*)
G. lucidum (Leyss.) Karst. on *Parinari*; common saprophyte.
G. mastoporum (Lév.) Pat. (*N. W. Thomas*).
Hexagonia discopoda Pat.
H. Dybowskii Pat.
H. hirta Pal.
H. Miquelii (Mont.) Sacc.
Lenzites Palisoti Fr.
Polyporus arcularius (Batsch) Fr. (*N. W. Thomas*).
P. durus Jungh.
P. gilvus (Schw.) Fr.
P. grammocephalus Berk. var. *favoloides* P. Henn.
P. ostreiformis Berk.
P. pyrophilus Wakef., on burnt tree stump.
Polystictus funalis Fr.
P. Hunteri Lloyd.
P. incomptus Fr.
P. licnoides (Mont.) Fr.
P. Mollerianus Sacc., Berl. & Roum.
P. occidentalis (Kl.) Fr.
P. sanguineus (Linn.) Fr.
P. tabacinus (Mont.) Fr.
P. xanthopus Fr.
Polystictus sp., possibly a form of *P. obovatus* (Jungh.). (*N. W. Thomas*).
Poria Ravenalae (Berk. & Br.) Sacc., on leaf base of *Elaeis guineensis*.
Trametes corrugata (Pers.) Bres.
T. incerta Currey.
T. Meyenii Kl., on a leguminous tree probably *Cynometra leonensis*.

AGARICACEAE.

- Armillaria mellea* (Vahl) Fr. on *Theobroma* and probably on *Psidium*.
Coprinus atramentarius (Bull.) Fr., common on shrivelled oil palm fruit bunches on the tree.
C. plicatilis (Curt.) Fr.
Cymatella sp., on *Leptoderris*.
Lentinus villosus Kl. (*N. W. Thomas*).
L. Tuber-regium Fr.

Marasmius sp. aff. *M. equicrinis* Mull., on several wild and cultivated hosts.
M. scandens Mass., on several wild and cultivated hosts.
M. stenophyllus Mont., on *Musa*.
Psilocybe foenisecii (Pers.) Quél.
Schizophyllum commune Fr.

LYCOPERDACEAE.

Lycoperdon Wrightii Berk. & Curt.
Podaxis carcinomalis (Linn.) Mass. (N. W. Thomas).

NIDULARIACEAE.

Cyathus limbatus Tul.

FUNGI IMPERFECTI.

PHOMACEAE (Sphaeroidaceae).

Botryodiplodia Theobromae Pat., on numerous hosts.
Coniothyrium sp., on *Mangifera*.
Darluca filum (Biv.) Cast., in uredo-sori.
Diplodia macrospora Earle, on *Zea*.
D. natalensis Pole Evans, on *Citrus*.
Macrophomina Phaseoli (Maubl.) Ashby, on *Brassica*, *Carica*,
Phaseolus and *Vigna*.
Phoma insidiosa Tassi, on *Zea* and *Sorghum*.
Phoma sp., on *Carica*.
Phyllosticta Batatae Thuem., on *Ipomoea*.
? *P. hortorum* Speg., on *Solanum*.
Phyllosticta sp., probably *P. Cucurbitacearum* Sacc., on *Cucurbita*,
Cucumis and *Trichosanthes*.
Septoriella philippinensis Sacc., on *Saccharum*.

ZYTHIACEAE (Nectrioidaceae).

**Aschersonia crenulata* Pat. & Har., on an aleurodid on *Phyllanthus discoides*.
**A. hypocroidea* (Cooke & Mass.) Petch, on *Aleurodes* sp. on
Funtumia africana, *F. elastica* and *Anisophyllea laurina*.

LEPTOSTROMACEAE.

Leptothyrium Pomi (Mont. & Fr.) Sacc., on *Citrus*.

DISCELLACEAE (Excipulaceae).

Dinemasporium graminum Lév., on old leaves of *Ananas comosus*.
D. graminum Lév. forma *Bambusae* Roll., on old leaves of
Vetiveria nigriflora.
Ephelis japonica P. Henn., on *Digitaria* and *Paspalum*.

MELANCONIACEAE.

Colletotrichum Capsici (Syd.) Butl. & Bisby, on *Capsicum* and
Solanum : common as a saprophyte.

C. gloeosporioides Penz., on *Citrus* and other hosts.
Gloeosporium Mangiferae P. Henn., on *Mangifera*.
G. Manihotis P. Henn., on *Manihot*.
G. Melongenae Sacc., on *Solanum*.
G. Musarum Cooke & Mass., on *Musa*.
Pestalozzia Coffeae Zimm., on *Coffea*.
P. palmarum Cooke, on *Elaeis*.
Sphaceloma Fawcettii Jenkins, on *Citrus*.

MONILIACEAE.

- **Aspergillus candidus* Link group, doubtfully parasitic on larva of *Othreis fullonica*.
- **A. flavus* Link group, on Locust (*Locusta migratoria migratorioides*) and on nymph of *Zonoceros variegatus*.
A. versicolor (Vuill.) Tirabosch.
A. Wentii Wehm. series, on *Citrus*.
- **Beauveria Bassiana* (Bals.) Vuill, on *Nisotra uniforme*.
- **B. densa* (Link.) Vuill., on the kola weevil (*Paremydica insperata*).
Botrytis cinerea Pers., on *Citrus*, *Jatropha*, *Nerium*, *Persea*; common on blossoms.
- **Cephalosporium Lecanii* Zimm., on *Aspidiotus destructor* on Coconut, and on *Dinaspis annae* and *Lepidosaphes* sp. on Orange.
Chlamydomyces palmarum (Cooke) Mason, on decaying bud of *Cocos nucifera*.
Monilia sitophila (Mont.) Sacc.
Oospora Citri-Aurantii (Ferrar.) Sacc. & Syd., on *Citrus*.
Paecilomyces Varioti Bainier series and *P.* sp., on *Citrus* juice.
Penicillium citrinum Sopp.
P. digitatum Sacc., on *Citrus*.
P. italicum Wehm., on *Citrus*.
P. luteum Zukal group.
Piricularia Oryzae Bri. & Cav., on *Oryza*.
Piricularia sp., on *Solanum*.
Rhinotrichum spp., on *Musa* and *Cinnamomum*.
Trichoderma Koeningi Oudem., on soil.
T. viride Pers. ex Fr.
Trichothecium roseum Link.
- **Verticillium cinnamomeum* Petch, on *Aspidiotus destructor*.

DEMATIACEAE.

Alternaria circinans (Berk. & Curt.) Bolle, on *Brassica*.
A. macrospora Zimm., on *Phaseolus*.
Cercospora Batatae Zimm., on *Ipomoea*.
C. Canavaliae Syd., on *Canavalia*.
C. canescens Ell. & Mart., on *Phaseolus*, *Vigna*, *Hydrangea*, and *Petunia*, and apparently this species on *Crotalaria* and *Lycopersicum*. Also on moribund tissues of several hosts.
Cercospora sp. of *C. canescens* type, on *Clerodendron*.

- C. citrullina* Cooke, on *Citrullus*
C. coffeicola Berk. & Cooke, on *Coffea*.
C. Cucurbitae Ell. & Ev., on *Cucumis*, *Lagenaria* Luffa and *Trichosanthes*.
C. Duddiae Welles, on *Allium*.
C. fusimaculans Atk., on *Panicum*.
C. Henningsii Allesch., on *Manihot*.
C. Ipomoeae Wint., on *Ipomoea*.
C. Melongenae Welles, on *Solanum*.
C. Nicotianae Ell. & Ev., on *Nicotiana*.
C. personata (Berk. & Curt.) Ell. & Ev., on *Arachis*.
C. physalicola Ell. & Barth., on *Physalis*.
C. Sesami A. Zimm., on *Sesamum*.
C. Sorghi Ell. & Ev., on *Sorghum* and on male inflorescence of *Zea Mays*.
C. Stizolobii Syd., on *Mucuna* and *Stizolobium*.
C. tageticola Ell. & Ev. on *Tagetes*.
Cercospora spp., mostly apparently undescribed, on *Anchomanes*, *Boerhaavia*, *Callichilia*, *Cardiospermum*, *Cassia*, *Cercestis*, *Chlorophora*, *Clerodendron*, *Deinbollia*, *Dioscorea*, *Dioscoreo-phyllum*, *Gynura*, *Hymenocardia*, *Hyptis*, *Melochia*, *Phyllanthus*, *Pouzolzia*, *Rauwolfia*, *Scytopetalum* and *Xylopia*.
Cercosporina ricinella (Sacc. & Berl.) Speg., on *Ricinus*.
Cladosporium fulvum Cooke, on *Lycopersicum*.
Clasterosporium Maydicum Sacc., on *Zea* and *Sorghum*.
Curvularia lunata (Wakker) Boedijn, on *Sorghum*, *Zea* and other hosts.
Helicoma ? *velutinum* Ellis, on leaf of *Cinnamomum zeylanicum*.
Helminthosporium flagellatum Yates, on sooty mould on *Cola nitida* and *Coffea liberica*.
H. glabroides Stev., on *Irenina glabra* on *Coffea liberica*.
H. gigasporum Berk. & Br. subsp. *javanicum* Penz. & Sacc. on *Carica* and *Phaseolus* ; common saprophyte.
H. Oryzae van Breda de Haan, on *Oryza*.
H. torulosum (Syd.) Ashby, on *Musa*.
H. turcicum Passer, on *Zea* and *Sorghum*.
Helminthosporium sp. near *H. Helleri* Stev., on *Irenina glabra* on *Coffea liberica*.
Monilochaetes infuscans (Ell. & Halst.) Harter, on *Ipomoea*.
Nigrospora Oryzae (Berk. & Br.) Petch, on *Oryza* and other hosts.
Periconia pycnospora Fres., on fruit of *Bauhinia acuminata*, and possibly this species especially common on dead leaves of *Manihot utilisima*.
Pseudocampylopus fasciculatum (Cooke & Mass.) Mason.
Ragnhildiana Manihotis Stev. & Solh., on *Manihot*.
Scolecotrichum Musae Zimm., on *Musa*.
Stachyliidium Theobromae Turc., on *Musa*.

STILBACEAE.

- **Gibellula araneorum* (Schw.) Syd., on spiders and a nymph of homopterous bug on *Merremia dissecta*.
- **Hirsutella citriformis* Speare, on a reduviid bug and on a wasp.
- Stilbum* ? *nanum* Mass., on *Cajanus*.
- **Synnematium Jonesii* Speare (probably), on *Basilides bipennis* and another membracid, and on *Alcides dentipes*.

TUBERCULARIACEAE.

- Exosporium Tamarindi* H. Syd., on *Tamarindus*.
- Fusarium herbarum* (Corda) Fr., on *Sorghum*.
- F. moniliforme* Sheld., and var. *subglutinans* Wollenw. & Reink., on *Citrus*.
- F. oxysporum* Schlecht., on *Ageratum* and *Citrus*.
- F. oxysporum* Schlecht., var. *cubense* (E. F. Sm.) Wollenw. & Reink., on *Musa*.
- F. sambucinum* Fuck. form 6 Wr. (*F. discolor* var. *sulphureum* (Schl.) App. & Wollenw.), on *Sabal*.
- F. sambucinum* Fuck. forma, on *Cocos*.
- F. semitectum* Berk. & Rav. var. *major* Wollenw. (*F. incarnatum* (Rob.) Sacc.), on *Cordyline*.
- F. theobromae* App. & Strunk., on *Citrus*.
- * *Microcera aurantiicola* Petch or *M. coccophila* Desm., on mussel scale of *Citrus*.
- Myrothecium* sp., probably *M. roridum* Tode, on *Impatiens*, *Luffa*, *Rinorea* and *Trichosanthes*.
- Papularia Arundinis* (Corda) Fr.
- **Pseudomicrocera Henningsii* (Koord.) Petch var. *longispora* Petch (*Calonectria diploa* (Berk. & Curt.) Wollenw), on *Aspidiotus destructor* on Coconut, on scale insects on Orange and Cape Gooseberry, and on *Aspidiotus* sp. on Avocado.
- Spegazzinia ornata* Sacc.
- Sphacelia* spp., on *Pennisetum* and *Paspalum*.

STERILE MYCELIA.

- Rhizoctonia Solani* Kuehn. See *Corticium Solani*.
- Sclerotium coffeicola* Stahel, on *Jasminum*.
- S. Rolfsii* Sacc. group. See *Corticium* spp.

PSEUDOSACCHAROMYCETES.

- Mycotorula* sp. (? or *Candida* sp.), in Citrus fruits and in Citrus juice.

XL—A NOTE ON THE HIMALAYAN DAPHNES. B. L. BURTT.

Sir Joseph Hooker himself suggested that the name *Daphne cannabina* Wall. of the Flora of British India (14)* covered more than one species, and W. W. Smith and G. H. Cave (17) have since

* The numbers in parentheses refer to the bibliography at the end of the paper.

shown that this is so. The nomenclature of the plants concerned, however, has never been brought into conformity with the International Rules, and it therefore seems desirable to review the whole question.

Confusion in both classification and nomenclature dates from the first reference to these plants. In 1818 Wallich read a paper to the Asiatic Society in which he described the paper-shrub of Nepal under the name "*Daphne cannabina* Lour. ?," and this was published with a good figure and dissections in 1820 (2). Two varieties were recorded by Wallich in his "Observation," one with pure white, the other with reddish flowers, and the flowers were said to be fragrant. We can now say that Wallich's plate represents the plant with rather short reddish flowers and acute leaves found in Nepal and the eastern Himalayas (*D. cannabina* Wall. sensu W. W. Smith et Cave), whereas the white-flowered form, which has obtuse leaves and scentless flowers, is the western Himalayan plant (*D. papyracea* Decne. sensu W. W. Smith et Cave). Wallich's description combines the characters of both species: it is unfortunate that he should have written "Flores . . . albi, fragrantissimi," as a *Daphne* with fragrant white flowers does not seem to be known from Nepal. Wallich called attention to the fact that his plants differed from Loureiro's description of *D. cannabina* (1) in certain particulars, especially in having alternate, not opposite, leaves. True *D. cannabina* Lour. is now generally identified as *Wikstroemia indica* Linn. (21).

Later writers adopted the name *D. cannabina* Wall. (non Lour.) as though it had been a new species proposed by Wallich, and not merely a misidentification. This course was justified, according to the lax views on nomenclature then held, since the true *D. cannabina* Lour. had been reduced to *Wikstroemia indica* Linn. It is now recognised that misidentifications have no status in scientific botanical nomenclature, and a Recommendation was adopted at the Sixth International Botanical Congress, Amsterdam (1935), that they should not be cited in synonymy but be included in notes appended to the synonymy or to the description.

David Don (3) distinguished two species now placed in the section *Daphnanthes* subsection *Daphnanthoides* (Gilg) Keissler, to which "*D. cannabina* Wall." belongs. The first he identified with *D. odora* Thunb., but it is not that species, which is a native of Japan. Don's *D. odora* may be recognized from the description of the ovate acute perianth lobes and the note "flores virescenti-albi odoratissimi," as the white-flowered western Himalayan plant. It seems probable that Don identified *D. cannabina* Lour. sec. Wall. as his *D. odora* on account of Wallich's description of the flowers as white, and that the statement as to scent was copied by him from Wallich.

For the second species Don adopted Hamilton's manuscript name *Daphne Bholua*; this is identifiable with the eastern reddish-flowered plant. Don said his *D. odora* differed from *D. Bholua* in

having the perianth tube sericeous only at the base, and this is often found to be the case, though the character is not constant. *Daphne Bholua* Hamilt. ex D. Don is thus the earliest valid name for the eastern Himalayan plant with reddish flowers.

The entry in Wallich's "Catalogue" (4) is:—

1045. *Daphne cannabina* Lour. ?—Herb. 1824.

1. *Napalia* 1820.

2. *Kamoon R.B.*

β *latifolia* Wall. an distincta spec. ?

Pundua, F. De Silva

The Nepal plant is *D. Bholua*; Robert Blinkworth's Kamoon [Kumaon] specimen is the western plant with white flowers; while β *latifolia* is an Assam plant closely allied to *D. sureil* W. W. Smith et Cave.

Don's recognition of two species was not generally accepted, probably owing in part to his confusion of the western plant with *D. odora* Thunb. Thus Royle (5) wrote of *D. cannabina* "this Mr. Don thinks does not differ from *D. odora* Thunb. and of which his own, *D. Bholua*, appears to be only a variety."

In 1840 Steudel (6) proposed the name *D. papyracea* Wall. for *D. cannabina* Lour. sec. Wall., non Lour. This was simply a new name for the plants misidentified by Wallich, and accordingly covered both the white and the reddish-flowered plants. Steudel accepted *D. Bholua* Ham. ex D. Don as an independent species.

In the following year Meisner (7) gave a description covering both species, under the name *D. papyracea* Wall., and retained Wallich's variety *latifolia*. No mention is made of Don's work and there is no indication that Meisner suspected that more than one species was involved. In 1844 Decaisne (8) figured the western species as *D. papyracea* Wall. and referred to Meisner and Steudel as well as quoting *D. cannabina* Wall. (non Lour.) as a synonym. In fact, although he figured and described only the western form, there is no indication that he realised that two species were passing under this name or that he intended to restrict the name to the western species. The name *D. papyracea* Wall. sensu lato was accepted by Walpers (9), Meisner (11), Brandis (12) and Gamble (13); Meisner added a var. *parvifolia* from Bhutan and Khasia and considered *D. Bholua* "species obscura." Griffith (10) referred his Assam plant to *D. cannabina* Wall., but it is actually equivalent to Wallich's variety *latifolia* (*Daphne* sp. near *D. sureil* W. W. Smith et Cave).

In 1886, however, Hooker (14), who suspected that more than one species was involved, reverted to the name *D. cannabina* Wall., non Lour., remarking "Finding no authority for Steudel having attributed the name of *D. papyracea* to Wallich, I have taken for it that of *D. cannabina* which Wallich did give it, though under the erroneous impression that it was Loureiro's plant of that name."

This was naturally followed by a general return to the name *D. cannabina* (Gamble, 13a, 13b; Brandis, 16). Keissler (15)

recognized three varieties, in addition to the type, under the names β *latifolia* Meisn., γ *parvifolia* Meisn., δ *Bholua* (Don) Keissler. The first two had been described by Meisner as varieties of *D. papyracea* and should therefore be cited as var. *latifolia* (Meisn.) Keissler and var. *parvifolia* (Meisn.) Keissler.

In 1913 Smith and Cave published "A note on the Himalayan species of *Daphne*" (17) in which they recognized the eastern reddish-flowered and the western white-flowered plants as distinct species under the names *D. cannabina* Wall. and *D. papyracea* Decne. respectively. They also recognized an alpine variety of *D. cannabina*, var. *glacialis*, and a new species, *D. sureil*, found at lower levels than *D. Bholua* (*D. cannabina* Wall. sensu Smith et Cave) and distinguished by having longer white flowers and acute perianth lobes. This species differs from the western Himalayan plant in having acuminate leaves and caducous bracts.

Smith and Cave's classification has been generally accepted, and the names used by them have also been adopted by recent writers (Parker, 19, 19a; Osmaston, 20). It is shown above, however, that the name "*D. cannabina* Wall." adopted by Smith and Cave must be rejected as being a mere misidentification, and that the earliest valid name for the reddish-flowered eastern plant is *D. Bholua* Ham. ex D. Don. The question now arises what name should be borne by the white-flowered western plant. The name *D. papyracea* taken up by Smith and Cave, was published by Steudel (6) as a substitute for "*D. cannabina* Wall." which covered both species. Is it legitimate to restrict it to the white-flowered western one? The publication of *Daphne papyracea* Wall. ex Steud. was validated by the reference to Wallich's description under the name "*Daphne cannabina* Lour.?" If it could be shown that that description applied mainly to one species, then the name *D. papyracea* Wall. ex Steud. would have to be assigned to that species, whether as an accepted name or as a synonym. Actually, however, as indicated above, the description applies almost equally to both plants, though the plate represents only the reddish-flowered one. The "Regulations for determining types" provided for in the International Rules, ed. 3, have not yet been prepared, and the case must accordingly be considered on its own merits, having regard to the general principles underlying the International Rules.

Smith and Cave considered that the plant on which Wallich based his description and figure of *Daphne cannabina* was the reddish-flowered eastern one, although they recognized that the description might include both plants. They accordingly retained the name "*Daphne cannabina* Wall." for the eastern plant. They applied "*Daphne papyracea* Decne." to the white-flowered western plant on the ground that that was the one figured by Decaisne under that name. Their action in retaining the misidentification "*Daphne cannabina* Wall.", being contrary to the Rules, cannot be upheld, and their choice of a lectotype for that misapplied name consequently falls to the ground. On the other hand, the name *Daphne papyracea*

Wall. ex Steud., as has been shown, was validly published, and Smith and Cave's restriction of it to the western plant must accordingly be taken into account.

Among the principles on which the Rules are based is "the avoidance of all useless creation of names" (Art. 4). The selection by Smith and Cave of the white-flowered western species as typifying the name *Daphne papyracea* Wall. ex Steud. in effect avoided the creation of a new name for that species, and in the absence of cogent reasons to the contrary, their decision should be upheld.

Apart from this consideration, there would have been a good case for the choice of the red-flowered eastern species as lectotype, since this was the only one figured by Wallich.

It may be pointed out that much of the confusion which has arisen in the nomenclature of the two species concerned is due to the practice formerly current of citing misidentifications as if they were validly published names. The citation "*Daphne cannabina* Wall." is highly misleading. Wallich proposed no new species bearing that name: he tentatively identified certain Himalayan plants with *Daphne cannabina* Lour. Had he considered that they represented a new species, he would have given them a new specific name. Indeed it appears that he either previously or subsequently suggested the new name *D. papyracea* in manuscript, since Steudel attributed it to him.

The name *D. Bholua* Ham. ex D. Don is accordingly retained here for the eastern species, and *D. papyracea* Wall. ex Steud. for the western one.

Although it is now recommended that misidentifications should not be cited in the synonymy, it seems desirable to include the various uses of the name "*Daphne cannabina* Wall." as it was employed virtually as a later homonym.

Finally it must be pointed out that Rehder (18) identified a number of Chinese specimens as *D. papyracea* Decne., using that name to include *D. Bholua* and *D. papyracea* sensu stricto. While it has not been possible to make a detailed investigation of these plants, there seems little doubt that they do not belong to the Himalayan species.

I am greatly indebted to Dr. T. A. Sprague for help with the nomenclature of these plants, and he has added some notes on the principles involved.

***Daphne Bholua* Ham. ex D. Don, Prodr. Fl. Nepal. 68 (1825).**

D. cannabina Lour. ? sec. Wall. in Asiatick Researches, **13**, 385 (1820), quoad tab. et descr. p.p.—non Lour. ; Numerical List n. 1045 (1829), quoad spec. nepalense.

D. papyracea Wall. ex Steud. Nomencl. Bot. ed. 2, **1**, 483 (1840), p.p. ; Meisn. in Denkschrift. Bot. Gesellsch. Regensburg, **3**, 282 (1841), p.p. ; Walp. Ann. Bot. Syst. **1**, 582 (1848-49), p.p. ; Meisn. in DC. Prodr. **14**, 537 (1858), p.p. ; Brandis, For. Fl. N.W. and Central India, 386 (1874), p.p. ; Gamble, Man. Ind. Timb. 315 (1881), p.p.

"*D. cannabina* Wall." sec. Hook. fil. Fl. Brit. Ind. **5**, 193 (1886), p.p.; Keissler in Engl. Bot. Jahrb. **25**, 93 (1898), p.p.; Gamble Man. Ind. Timb. ed. 2, 577 (1902), p.p.; Brandis, Indian trees, 544 (1906), p.p.; W. W. Smith et Cave in Rec. Bot. Surv. India, **6**, 54 (1913).

D. cannabina var. *Bholua* (Ham. ex D. Don) Keissler in Engl. Bot. Jahrb. **25**, 93 (1898).

Frutex 1.5-2.6 m. altus (ex Smith et Cave), ramis primum breviter hispidis demum glabrescentibus cortice plerumque brunneo papyraceo. *Folia* alterna; petiolus 5 mm. longus, supra sulcatus, vel a lamina vix distinctus; lamina anguste elliptica usque linearib lanceolata, 7-17 cm. longa et 1.7-2.6 cm. lata, apice acute, rarius obtuse, acuminata vel acuta, basi angustata, marginibus integerrimis levissime revolutis interdum, praecipue folium longiorum, valde undulatis, supra nitens, subtus pallidior, utrinque glabra; costa supra impressa, subtus prominens; nervi laterales tenues, supra impressa, subtus prominuli. *Perulae* alabastri fertilis ("bracteae" auctorum aliorum) sub anthesi caducae, omnes plus minusve similes, late lanceolatae usque ad oblongo-ovatae (exterioribus brevioribus) 1.4-1.8 cm. longae, circiter 4 mm. latae, exteriores dorso glabrae, interiores appresse villosae, omnes apice pilosis et marginibus ciliatis. *Flores* circiter 7-12, capitati, in ramis terminales et ad hoc saepe in ramulis brevioribus in axillis foliorum superiorum editi, perulis circumcincti, fragrantissimi. *Pedicelli* 3-4 mm. longi, apice articulati, dense flavo-viride villosi. *Perianthium* album extra rubro- vel purpureo-suffusum (rarissime omnino album?); tubus circiter 1 cm. longus, basi leviter dilatatus, extra praecipue basin versus dense villosus, intus glaber; lobi 4, patentes, ovati, 6 mm. longi et 4 mm. lati, apice saepe leviter retusa, dorso et apice pilosa. *Stamina* 6, biseriata, omnia similia, superiora 3 mm. infra orem tubi et lobis opposita, inferiora 6 mm. infra orem tubi et lobis alterna inserta; filamenta 0.5 mm. longa, glabra; antherae 2 mm. longae. *Discus* hypogynus annularis, 0.5 mm. altus, integer, glaber. *Ovarium* brevissime stipitatum, ovoideum, 4 mm. altum, apice in stylum 0.5 mm. longum stigmate 0.5 mm. diametro papilloso coronato contractum, glabrum. *Ovulum* solitarium, pendulum. *Fructus* baccatus, niger, ovoideus, circiter 7 mm. longus et 5 mm. diametro, stigmate persistente. *Semen* solitarium, 4 mm. diametro.

INDIA. Eastern Nepal, northern Bengal, Sikkim, Bhutan and north-west Assam.

var. **glacialis** (W. W. Smith et Cave) B. L. Burtt, comb. nov.
D. cannabina var. *glacialis* Smith et Cave in Rec. Bot. Surv. India, **6**, 52 (1913).

Frutex 15-30 cm. altus, ramis atro-purpureis mox glabrescentibus, foliis deciduis, floribus cum foliis vel saepe prius nascentes.

INDIA. Sikkim; Laghep, 2850 m., May 4 1876, C. B. Clarke 27779 A.C; Tongloo, 2700-3000 m., 1883, G. Watt 7023.

Daphne papyracea Wall. ex Steud. emend. W. W. Smith et Cave in Rec. Bot. Surv. Ind. **6**, 54 (1913); Parker, For. Fl. Punjab, 432 (1918), ed. 2, 434 (1924); Osmaston, For. Fl. Kumaon, 454 (1927).

D. cannabina Lour. ? sec. Wall. in Asiatick Researches, **13**, 385 (1820), quoad descr. p.p., excl. tab.—non Lour.; Numerical List No. 1045 (1829), quoad spec. kumaonense.

D. odora Thunb. sec. D. Don, Prodr. Fl. Nepal. 68 (1825) —non Thunb.

D. papyracea Wall. ex Steud. Nomencl. Bot. **1**, 483 (1840), p.p.; Meisn. in Denkschrift. Bot. Gesellsch. Regensburg, **3**, 282 (1841), p.p.; Decne. in Jacquemont, Voyage dans l'Inde, **4**, Botanique 143, t. 148 (1844); Walp. Ann. Bot. Syst. **1**, 582 (1848-49), p.p.; Meisn. in DC. Prodr. **14**, 537 (1858), p.p.; Brandis, For. Fl. N.W. and Central India, 386 (1874), p.p.; Gamble, Man. Ind. Timb. 315 (1881), p.p.

"*D. cannabina* Wall." sec. Hook. fil. Fl. Brit. Ind. **5**, 193 (1886), p.p.; Keissler in Engl. Bot. Jahrb. **25**, 93 (1898), p.p.; Gamble, Man. Ind. Timb. ed. 2, 577 (1902), p.p.; Brandis, Indian Trees, 544 (1906), p.p.

Frutex sempervirens, superne sympodialiter ramosus, ramulis primum dense hispido-pubescentibus demum glabrescentibus, cortice cinereo-brunneo papyraceo. *Folia* alterna, breviter petiolata; petiolus plerumque 0.5-1 cm. longus vel interdum a lamina vix distinctus, supra sulcatus; lamina elliptico-oblongeolata vel oblaneeolata, magnitudine variabilis, 6 cm. longa et 1.5 cm. lata usque ad 16 cm. longa et 3 cm. lata, apice obtusa vel obtuse acuminata, leviter retusa et pilis apicalibus albis saepe instructa, basi in petiolum sensim angustata, marginibus integerrimis leviter revolutis, supra nitens, subtus pallidior, utrinque apice excepto glabra; costa supra impressa, subtus prominens; nervi laterales utrinque circiter 6, supra venulis vix validiores et eiscum reticulo leviter impresso formantes, subtus prominuli, venulis subtus inconspicuis. *Perulae* exteriores alabastris terminalis fertilis ('bracteae' auctorum aliorum) per anthesin persistentes, oblongae, plus minusve acuminatae, 1.3-2 cm. longae, 0.5-0.6 cm. latae, supra glabrae, extimae dorso glabrae ceterae plus minus appresse sericeo-villosae, plerumque sericeo-ciliatae et apice ipso pilis brevibus albis instructae; perulae interiores (folia redacta) ab exterioribus haud plane distinctae, circiter 1.5-2 cm. longae et 0.5 cm. latae, foliis similes sed dorso saepe appresse sericeo-villosae, post anthesin crescentes et alabastra 1-2 axillaria emittentes. *Flores* circiter 12, terminales, capitati, perulis circumcincti, inodori, pedicellati. *Pedicelli* 2 mm. longi, pilis flavo-viridibus dense sericeo-villosi. *Perianthium* album; tubus circiter 1.1 cm. longus, basi leviter dilatatus, extra (interdum basin versus tantum) appresse et molliter villosus, intus glaber; lobi 4, patentes, elliptico-oblongi, 8 mm. longi et 4 mm. lati, acuminati marginibus acuminis involutis, pilis apicalibus instructi. *Stamina* 8, biseriata, omnia similia, superiora perianthii lobis

opposita ore tubi 3 mm. distante inserta, inferiora lobis alterna et 6 mm. infra sinum inserta; filamenta glabra, 0.5 mm. longa; antherae oblongae, fere 1.5 mm. longae. *Discus* hypogynus annularis, 0.5 mm. altus, glaber. *Ovarium* stipite 1 mm. longo instructum, plus minus cylindricum, 3-4 mm. altum et fere 2 mm. diametro, apice truncatum, glabrum, uniloculare. *Stylus* crassus, 0.75 mm. longus, glaber, stigmate capitato 1 mm. diametro papilloso instructus. *Ovulum* solitarium, pendulum. *Fructus* baccatus, ruber, obpyriformis, usque 1 cm. longus et 0.7 cm. latus. *Semen* solitarium, pisiforme, circiter 6 mm. diametro.

INDIA. Western Punjab (around Simla), northern United Provinces and western Nepal.

After flowering and while the fruits are developing, the young axis immediately below the inflorescence usually elongates and the inner bud-scales enlarge; they never, however, attain the size of ordinary foliage leaves, but one, or more rarely 2, develop axillary buds which grow out into a new shoot, the inflorescence having terminated the growth of that from which it arose. *Daphne papyracea* has been grown in the Temperate House at Kew for many years under the name *D. cannabina*.

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NOTE ON TYPIFICATION.

The following considerations regarding the typification of names emerge from the examination of this case.

I. LECTOTYPES OF VALIDLY PUBLISHED NAMES.

A. *Original choice of lectotype.*

1. Where the original description clearly applies mainly to one element, that element should be taken as lectotype.

2. Where the original description covers two or more elements, and does not apply mainly to one of them, a lectotype should be chosen in such a way as to avoid any unnecessary creation of names.

3. Where the original description covers two or more elements, only one of which is figured in the original place of publication, that element should be taken as lectotype.

B. *Action by subsequent authors.*

4. A lectotype already chosen by a previous author should be accepted unless its choice contravened section 1.

II. LECTOTYPES OF MISAPPLIED NAMES.

5. Misapplications of names are not recognized under the International Rules. It follows that lectotypes of misapplied names have no status in botanical nomenclature.

T. A. SPRAGUE.

XLI—MISCELLANEOUS NOTES.

The Curatorship of Kirstenbosch.—Mr. F. W. Thorns, who left Kew in 1928, has been appointed Curator of the National Botanic Garden, Kirstenbosch, in succession to Mr. J. W. Mathews. Mr. Mathews, who is also an old Kewite, has held the post of Curator since the foundation of the Garden in 1913.

An Outline of Malayan Agriculture.*—A "Handbook of Malayan Agriculture" has been in circulation for many years. In view of recent developments in Malayan agriculture, it was felt that this was out of date and it has accordingly been withdrawn from circulation and replaced by the present publication. The work has been entirely re-written and has been very ably compiled by Mr. D. H. Grist, the Economist of the Agricultural Department. Many officers of the Department and of other services, as well as the Director of the Rubber Research Institute, have, however, co-operated by furnishing information on particular subjects, while the technical publications of the Agricultural Department, and the knowledge acquired by its Field Officers, have been freely drawn upon.

*Compiled by D. H. Grist, Agricultural Economist, Department of Agriculture, Straits Settlements and Federated Malay States. Published by the Agricultural Department, Kuala Lumpur. 1936. Pp. xiii + 378. Illustrated by 86 plates and 2 Maps. Price \$3.

The book is divided into six parts. The first two are general and deal with the development of Malayan agriculture, land tenure, agricultural policy, co-operation, methods and systems of cultivation and soil treatment. The remaining four parts deal with the major, secondary and minor crops of the country and with livestock. In the last part there is a chapter on the farming of fresh-water fish, which, in the moist tropics, where ordinary stock farming must of necessity take a minor place, plays an important part in the domestic economy of the people.

The task of compilation can have been no light one ; for there are three distinct types of agriculture in the country and yet they are in a way interwoven and each can learn and has learnt something from the others. Firstly, there is the Malayan type, which reaches its highest development in the cultivation of rice ; otherwise this type consists mainly of perennial tree crops such as coconuts, fruit and, more recently, rubber. Secondly, there is estate agriculture, which concentrates usually on a single crop and is worked by hired labour under European direction. Finally there is the introduced Chinese agriculture, based on a highly developed practice of arable farming and which is largely confined to short-term crops which can be grown in rotation. With this system, adequate manuring is often essential and it is thus frequently supplemented with stock farming of a kind. Occasionally a single crop enters into all these types of agriculture. *Derris*, for example, is grown by the Malays as a fish poison ; it is grown and used by the Chinese market gardener as an insecticide, and is now being grown on European estates as an export crop.

H. C. SAMPSON.

Cloves.—It is pleasing to record the appearance of a book* devoted entirely to this important spice. Although much has been written in regard to the clove (*Eugenia aromatica*), existing information, as with other spices, is scattered and not readily obtainable. A good general account of the clove is contained in Ridley's " Spices " but changes in production and an increase in knowledge regarding the crop has taken place since the publication of Ridley's work. Happily the author of the book appears to have made himself thoroughly familiar with recent work on his subject and has not failed to abstract from it.

The book is divided into five sections under the headings—" The Moluccas ", " Mascarene Islands ", " Zanzibar ", " Madagascar " and " Penang ", these being the main clove producing areas of the world. The first of these occupies rather more than half the volume. This is appropriate as it is only in the Moluccas that the Clove tree occurs wild and it was there that the early trade in the

*" A Pageant of the Spice Islands." By R. H. Crofton. John Bale, Sons & Danielsson Ltd., London, 1936. Pp. 255 ; illustrations 5. Price 5s. net.

spice developed. The writer has paid close attention to the history of the spice trade and has obviously consulted a wide range of literature dating from early times in his search for information. References to literature are freely quoted in the text.

In turning to more modern times the author deals with production in Zanzibar, Pemba, Madagascar and Penang. Information on the growth, cultivation and yield of the tree in these countries is given. In the appendix there are useful production figures and information regarding grading in Zanzibar and Madagascar.

F. N. HOWES.

A Revision of *Eriogonum*.*—The first revision of this genus of Polygonaceae was published in 1870 by Torrey and A. Gray, who recognized 81 species (Proc. Am. Acad. 8, 146-190). Seven years later, Sereno Watson raised the number of species to 95, and supplied a revised classification. No general account of *Eriogonum* has appeared since then. Miss Stokes' study of the genus will accordingly be welcomed by all botanists who have to deal in any way with this difficult group.

The author "has classified as species any group having an identity which is maintained over a large or small area". An attempt is made to correlate the characters of subspecies and varieties with the climatic conditions under which they occur. Thus *Eriogonum vimineum* in an area with a long vegetative season is represented by the subspecies *gracile*, with "leaves alternate, not rosulate at base, long, bracts foliaceous"; with a medium vegetative season the leaves become "rosulate at base, shorter, ovate to oblong, petioles shorter, bracts reduced," as in one form of var. *Davidsonii*; while a short vegetative season is correlated with "leaves rosulate at base, round to reniform, bracts smaller, stiff, not at all foliaceous", as in another form of var. *Davidsonii* and the subspecies *molestum* and *Baileyi*.

These and numerous other "adaptations" are dealt with in the Introduction (pp. 8-11) which contains also sections on "Suspected Hybrids," "Dispersion," and "Geographical Distribution and Phylogeny." A great centre of distribution is found in eastern Oregon and southwestern Idaho. "Examined as a whole, the species of *Eriogonum* resemble an advancing and retreating wave. The wave-like movement is entirely in accord with the recent geological history of the country. The glaciers are known to have advanced into the Great Basin and to have receded."

Miss Stokes recognises 155 species of *Eriogonum*, about 40 of which are further divided into subspecies, the number of these

*"The genus *Eriogonum*, a preliminary study based on geographic distribution." By Susan G. Stokes. San Francisco, California. June 1, 1936 Pp. 124 + [8]. Price \$2.50, postage extra. Obtainable from Mr. J. T. Howell, California Academy of Sciences, Golden Gate Park, San Francisco.

amounting to about 200. Keys are supplied to eleven subspecies of *E. vimineum* and to the ten under *E. umbellatum*, but none is given to the fifteen subspecies of *E. effusum*.

Miss Stokes' little book is the result of many years study, and represents a courageous attempt to treat a large genus as an assemblage of living plants in their relationship with the environment, rather than as a series of bare morphological concepts.

T. A. SPRAGUE.

The Scientific Principles of Plant Protection.*—In 1928 Mr. Martin broke new ground, at least in this country, with his "Scientific Principles of Plant Protection", which treated the facts of plant protection from the point of view of the chemist rather than that of the botanist or zoologist. In the eight years that have elapsed since the original edition appeared, the subject has developed greatly, largely through the investigations of the author and his colleagues at the Long Ashton Research Station. A new edition was therefore desirable, and to include the new material the book has had to be practically re-written. The title is now amplified to indicate more precisely the scope of the work. The plan of the book is similar to that of the first edition, except that the chapter on biological control now follows that on the influence of external factors on susceptibility, thus bringing together the ecological data. The amount of new literature which has been surveyed for the second edition may be judged from the fact that the number of pages of text has increased from 289 to 348 and the number of references cited from about 850 to nearly 1200.

The book is most useful both as a critical summary and as a work of reference to all those concerned with the protection of plants from fungus and insect pests. Good subject and author indexes are provided.

E. M. WAKEFIELD.

*"The Scientific Principles of Plant Protection, with Special Reference to Chemical Control." By Hubert Martin. London, Edward Arnold & Co., 1936. Pp. xii + 379. Price 21s. net.